REDACTED VERSION

# TCEQ Interoffice Memorandum

**To:** Mr. Sam Barrett, Waste Section Manager

TCEQ Region 4 Office

**From:** Ms. Merrie Smith, Manager

VCP-CA Section, Remediation Division

**Date:** November 8, 2016

**Subject:** **Request for Region to Investigate F.J. Doyle Salvage Facility located at (b) (6) (b) (6) (905 N. Poplar Street), Leonard, Fannin County, Texas**
TCEQ SWR No. 80951; EPA ID No. TXD980865109; Customer No. CN600359095; Regulated Entity No. RN100649227

Site Background

The geographic coordinates of the 0.6-acre F.J. Salvage Facility (site) are Latitude 33° 23' 23" North, Longitude 96° 14' 34" West. The site is bordered to the north by Cottonwood Street and a residential area, to the east by Poplar Street and the Leonard High School facility, to the south by an alleyway and two more residences. One of the facilities located southwest of the site is the school district day care center. The facility previously conducted salvage operations by stripping out-of-service power transmission transformers for recoverable metals starting in 1974 to 1999. The site has subsequently been used as a vehicle repair and tire shop. The facility is a registered industrial solid waste generator and transporter facility (SWR. 80951). The facility also had an air operating permit for operation of a heat cleaning unit at the site.

Sampling activities conducted in the early 1990's by the TNRCC and U.S. EPA documented releases of polychlorinated biphenyls (PCB)-contaminated soils on-site (concentrations ranging from <1.0 mg/kg to 2,300 mg/kg) and on off-site adjacent properties (concentrations of PCB's ranging from <1.0 mg/kg to 4,100 mg/kg). The sampling activities also documented metals, solvent and petroleum hydrocarbon impacts. The full extent of the contamination associated with former operations associated with the facility since the early 1990's has not been determined. The VCP-CA Section initiated entry of the case into the CA program in 2006 in response to a notice dated April 24, 2006 received by the TCEQ IHW Registration and Reporting Team, requesting the inactivation of the IHW registration associated with the facility.

Outstanding Compliance Issues (TCEQ Remediation Division, Corrective Action program)

The TCEQ issued a letter dated March 30, 2015 to representatives of F.J. Doyle Salvage and requested the submittal of the *Waste Management Unit* (WMU) *Closure Report* to support the proposed inactivation of the facility's registration, and required the submittal of an *Affected Property Assessment Report* (*APAR)* to document the assessment and cleanup of contamination associated with the facility as required by 30 TAC 350 (Texas Risk Reduction Program rules). Several prior status update letters requesting the submittal of the WMU Closure Report and APAR were issued by the TCEQ to representatives of F.J. Doyle Salvage in letters dated July 14, 2006, January 26, 2007, and September 5, 2008.

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We have received an *APAR* and *WMU Closure Report* (dated May 27, 2015) on October 13, 2015 and October 12, 2015, respectively, submitted in response to TCEQ letter dated March 30, 2015. TCEQ issued a letter dated November 16, 2015 approving the closure of WMU No. 003 (Miscellaneous Storage Containers; ref. as dumpster for plant trash), but directed F.J. Salvage representatives to prepare and submit a *Revised WMU Closure Report* to provide additional information to document the closure of WMU No. 001 (Miscellaneous Storage Containers; ref. as stored on a concrete pad) and WMU No. 002 (Thermal Processing Unit). The TCEQ also issued a notice of deficiency (NOD) letter dated January 12, 2016 in response to review of the October 2015 APAR and also re-iterated the TCEQ's prior directive (TCEQ letter dated November 16, 2015) to submit a *Revised WMU Closure Report for WMU No. 001 and 002*. The January 12, 2016 TCEQ letter specifically directed representatives of F.J. Doyle Salvage to submit the previously requested *Revised WMU Closure Report* for WMU No. 001 and 002 and to submit a *Revised APAR* to document completion of the following activities:

1. Provide an updated site reconnaissance of the property to document current site conditions, and determine areas warranting investigation/release verification.
2. Assess the overall physical security of the property to ensure the site is adequately protected with regard to potential risk posed by contamination on the property to potential trespassers on the property.
3. Complete an investigation to complete the delineation of the full extent of PCB, metals, and petroleum hydrocarbon contamination.
4. Re-assess previously sampled areas to document compliance with current data usability requirements and assess current environmental conditions.
5. Complete a required field receptor survey.
6. Evaluate the behavior of contaminants in relation to drainage conditions at the site
7. Complete a groundwater assessment.
8. Evaluate the site for ecological exposure pathway.

TCEQ has been attempting to obtain the *Revised APAR* and *Revised Closure Report* for WMU No. 001 and 002, but has received nothing from Doyle family representatives since issuance of the January 12, 2016 TCEQ letter. The October 2015 *APAR* was also noted to provide only a re-submittal of the soil sampling date previously documenting in the prior 1990 TNRCC and U.S. EPA investigation report associated with the facility. The TCEQ has also been coordinating with representatives of the U.S. EPA (Mr. Jim Sales) for these past several years specific to responsible party obligations under Toxic Substances Control Act (TSCA) for the PCB contamination associated with the site.

Representatives of F.J. Doyle Salvage have the continuing obligation to ensure that municipal hazardous waste and industrial solid waste are managed in a manner which does not cause the discharge or imminent threat of discharge of waste into or adjacent to waters in the state, a nuisance, or the endangerment of the public health and welfare, as required by 30 TAC §335.4. Our review of the TCEQ files indicates that this facility has not completed closure of WMU No. 001 and 002 in accordance with the requirements of 30 TAC §335.8. The facility has also not completed the required assessment/remediation of existing contamination issues associated with former operations associated with the site in accordance with the requirements of 30 TAC §350. As such, representatives of F.J. Doyle Salvage may be in violation of the Texas Water Code § 26.121 - Unauthorized Discharges Prohibited. Section 26.121 states that "except as

authorized by rule, permit, or order issued by the commission, no person may discharge sewage, municipal waste, recreational waste, agricultural waste, or industrial waste into or adjacent to any water in the state." F.J. Doyle Salvage's failure to submit documents and/or implement work required within the schedule set by the TCEQ is in violation of agency regulations and potentially subject to enforcement actions under Chapter 7 of the Texas Water Code.

Request for TCEQ Region 4 Assistance

*The TCEQ Corrective Action program is requesting assistance from the Region 4 Office to initiate a compliance investigation of the F.J. Doyle Salvage property to document the current regulatory compliance status of the facility with the industrial solid waste and hazardous waste regulations and to ascertain if initiation of enforcement action is appropriate.* Compliance investigation efforts are recommended to consist of the following activities:

1. Perform a site reconnaissance of the property (with supporting photographs) to document the following:
    - confirm status of existing waste management and operation activity,
    - confirm location and condition of WMUs associated with TCEQ SWR No. 80951,
    - determine presence/absence of waste streams associated with registration and any remaining transformers remaining on the property,
    - identify additional areas of concern warranting investigation/release verification, and
    - assess current overall physical security of the property (i.e., condition of existing fencing, locks, etc.) to ensure the site is adequately protected with regard to potential trespassers on the property.
2. Perform media sampling of the property such as the collection and analysis of shallow soil samples for target COCs (PCBs, metals, petroleum hydrocarbon), if feasible, at accessible locations surrounding former waste management units (WMU Nos. 001 and 002) and other areas of concern identified during the site reconnaissance to document the current status of environmental contamination associated with the property and supplement prior 1990's investigation data.
3. Perform file review to confirm existing outstanding issues and determine the overall regulatory compliance status of F.J. Doyle Salvage site with the industrial solid waste and hazardous waste regulations.

The contact for the F.J. Doyle Salvage facility is currently Mr. Danny Doyle, a son of deceased owner of the facility (Mr. Frank J. Doyle). The only direct contact information on file for Mr. Danny Doyle is the following email address: (b) (6) [redacted] (current as of December 2015). Mailing address is (b) (6) [redacted] Leonard, TX 75452. Another son of the deceased owner of the facility, Mr. Gary Doyle, was the former manager of the facility (phone (b) (6) [redacted] current as of 2006). Unfortunately, his whereabouts and current contact information are unknown. A review of tax records for the property (parcel ID No. 89301, 905 N. Poplar, Leonard, TX 75452) indicated payment of taxes on the property has been paid for 2016 (current assessed value of the property is $26,320. [Link to the Fannin County property search for the parcel is: http://esearch.fannincad.org/Search/Result?keywords=doyle%2C%20leonard%2C%20tx]

A chronological record of correspondence from TCEQ to representatives of F.J. Doyle Salvage regarding efforts to secure a complete *WMU Closure Report* and *APAR* (ref. Enclosure 1), copies of the original October 2015 *APAR* and *Closure Report (ref. Enclosure 2)*, copies of the 1998 *TNRCC Screening Site Inspection Report* and May 1997 *EPA Preliminary Assessment Report* documenting the only sample investigation activities associated with the site (Enclosure 3) are attached to this IOM in hard copy and provided in electronic portable document form (pdf) on the enclosed CD. Please direct any questions regarding this request to Ms. Eleanor Wehner of my staff at (512) 239-6542, Mail Code MC-127.

_____
Merrie Smith, Manager

ETW/mdh

Enclosures: Enclosure 1-Copies of TCEQ letters dated January 12, 2016, November 16, 2015, and March 30, 2015 (including copies of prior referenced TCEQ comment and/or status update request letters dated June 18, 2010, September 5, 2008 and January 26, 2007, July 14, 2006)

Enclosure 2- Copy of October 2015 *APAR* and October 2015 *Closure Report*

Enclosure 3-Copy of *1998 TNRCC Screening Site Inspection Report* and May 1997 *EPA Preliminary Assessment Report*

Enclosure 4-CD providing PDF of correspondence provided in Enclosure 1, 2 and 3 of the November 3, 2016 IOM

cc: Mr. Sam Barrett, Waste Section Manager, TCEQ Region 4 Office, Dallas

Enclosure 1

Copies of TCEQ letters dated January 12, 2016, November 16, 2015, and March 30, 2015 (including copies of prior referenced TCEQ comment and/or status update request letters dated June 18, 2010, September 5, 2008 and January 26, 2007, July 14, 2006)

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Jon Niermann, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

January 12, 2016

Mr. Danny Doyle
F.J. Salvage
(b) (6) [redacted]
Leonard, Texas 75452

Re: TCEQ Notice of Deficiency (NOD) to the following documents:
- *Affected Property Assessment Report*, received October 13, 2015
- *Response to TCEQ letter dated November 16, 2015*, dated December 16, 2015 *(submitted via email from Mr. Danny Doyle to the TCEQ on 12/16/2015)*

Former F. J. Doyle Salvage Transformers property located at (b) (6) [redacted]
(b) (6) (905 N. Poplar Street), Leonard (Fannin County), TX;
TCEQ SWR No. 80951; EPA ID No. TXD980865109; Customer No. CN600359095;
Regulated Entity No. RN100649227

Dear Mr. Doyle:

The Texas Commission on Environmental Quality (TCEQ) is in receipt of your *Affected Property Assessment Report* (APAR) for the above referenced property. The APAR was submitted to document the assessment of contamination associated with the property on-site and to areas off-site in accordance with the requirements of 30 Texas Administrative Code (TAC) 350. The TCEQ is also in receipt of an email submitted to the TCEQ from Mr. Danny Doyle on December 16, 2015, in response to TCEQ comment letter dated November 16, 2015. The November 16, 2015 comment letter was issued in response to TCEQ review of a Unit Closure Request and Facility Registration Inactivation Request, dated May 27, 2015. The APAR (received October 13, 2015) and May 27, 2015 were also submitted in response to TCEQ letter dated March 30, 2015, requesting a remediation status update of the waste management unit closure report and issues related to the assessment and cleanup of contamination associated with the facility.

Based on our review, the October 13, 2015 APAR does not provide adequate information to document compliance with the affected property assessment requirements of 30 TAC 350.51. In addition, the December 16, 2015 response does not provide the TCEQ's requested response (i.e. *Amended Closure Report for WMU No. 001 and 002*) to support the closure of the units or request for inactivation of the industrial solid waste registration (SWR) associated with the site. As such, the TCEQ cannot approve the APAR or the December 16, 2015 response regarding the closure of WMU No. 001 and 002/inactivation of the SWR at this time. A list of the deficiencies to the above referenced documents is enclosed. Please submit a *Revised APAR* to address the enclosed deficiencies associated with the October 13, 2015 submittal. In addition, the TCEQ continues to require the submittal of the *Amended Closure Report* for WMU No. 001 and 002 as previously instructed in TCEQ's November 16, 2015 letter (as per the enclosed comments).

An original and one copy of the *Revised APAR* for the referenced property and *Amended Closure Report for WMU No. 001 and 002* must be submitted to the TCEQ Remediation

Division at the letterhead address using mail code number MC-127. An additional copy of each document should be submitted to the TCEQ Region 4 Office in Dallas/Fort Worth. The *Amended Closure Report for WMU No. 001 and 002* is required to be submitted **within thirty (30) days of the date of this letter.** The *Revised APAR* must be prepared and submitted to the TCEQ for review **within 120 days from the date of this letter.** *As a reminder, failure to submit and/or implement the required WMU Closure and TRRP assessment/cleanup actions to address the contamination associated with the property within the schedule set by the TCEQ is violation of agency regulation and potentially subject to enforcement actions under Chapter 7 of the Texas Water Code.*

Please call me at (512) 239-6542 if you need additional information or wish to discuss these comments or the due dates. Thank you for your cooperation in this matter.

Sincerely,

Eleanor T. Wehner

Eleanor T. Wehner, P.G.
Sr. Project Manager
VCP-CA Section
Remediation Division
Texas Commission on Environmental Quality

ETW/mdh

Enclosures: TCEQ Comments to *Affected Property Assessment Report*, received October 13, 2015

TCEQ Comments to *Response to TCEQ letter dated November 16, 2015*, dated December 16, 2015 (submitted via email from Mr. Danny Doyle to the TCEQ on 12/16/2015)

cc: Mr. James Sales, USEPA Region 6, 1445 Ross Avenue, Suite 1200, Mail Code: 6MM, Dallas, TX 75202-2733

(b) (6) [redacted] Leonard, TX 75452

Mr. Sam Barrett, Waste Section Manager, TCEQ Region 4 Office, Dallas/Fort Worth

TCEQ letter dated January 12, 2016
ENCLOSURES
TCEQ SWR No. 80951

**TCEQ Comments to *Affected Property Assessment Report*, received October 13, 2015**

Based on our review of the *Affected Property Assessment Report,* received October 13, 2015, the TCEQ requires the submittal of a *Revised APAR* to address the following deficiencies:

Section 1 (Conclusions and Recommendations): The APAR suggests the future planned used of the on-site portion of the property may be a parking lot for Leonard ISD. As this facility is currently considered a commercial/industrial property as defined in TRRP (and likely zoned as such), *please note the applicability of residential land use restrictions applicable to educational facilities for properties conducting assessment/cleanup pursuant to the Texas Risk Reduction Program (TRRP) rules (30 TAC 350).*

1. Section 1.2: The APAR provides a summary of a site reconnaissance and physical observations of the property conducted by representatives of Terra-Solve in November of 2009. However, based on TCEQ's review of the text and supporting photographs associated with the 2009 site reconnaissance, areas of hydrocarbon contamination, unconfirmed presence of liquids in various storage tanks/containers, a parts washer, various containers of chemicals, debris, parts, etc. were identified on the property and the supporting photographs suggest an overall lack of property management and environmental housekeeping concerns associated with the property.

   As several years has passed, the APAR is noted to lack an overall assessment of *current* environmental conditions associated with the property. The APAR should be amended to provide an updated site reconnaissance completed by a qualified environmental professional to verify current site conditions, assess current and future risk of release of contaminants associated with the property and determine areas warranting additional investigation/release verification to satisfy the source area characterization requirements of TRRP [i.e., 30 TAC 350.51(a) and (b)]. A determination of the overall physical security of the site should also be performed to ensure the site is adequately protected with regard to potential risk posed contaminants on the property to potential trespassers on the property. As the TCEQ understands the site is inactive, removal and proper disposal of existing chemicals, chemical storage containers, drums, parts washer, tanks, etc.) should also be implemented and appropriately documented (proper removal and disposal). Please provide post removal inspection and photographic documentation by a qualified environmental professional to support the removal/disposal activities and copies of supporting legal records (e.g., receipts, waste manifests, bill of lading, etc.) documenting the proper disposal of materials transported off-site.

2. Section 2.1 and Section 5-Groundwater Assessment: An active public supply well was identified within 500 feet of the property. As such, the TCEQ will require verification of the presence/absence of groundwater contamination associated with the property in order to confirm whether the soil contamination identified or suspected to have been associated with site activities (i.e., petroleum hydrocarbons, solvents, PCBs and RCRA metals) has migrated to the uppermost water bearing unit. The TCEQ recommends the installation and sampling of a minimum of one (1) upgradient and three (3) downgradient monitor wells in the uppermost water bearing unit to initially determine if groundwater is impacted with contaminants identified or suspected to have been associated with site activities (i.e., petroleum hydrocarbons, solvents, PCBs and RCRA metals) and also to verify potentiometric flow conditions in the uppermost saturated zone. Based on the analytical results of the assessment, please note that additional groundwater assessment may be required to satisfy

the lateral and vertical assessment requirements of 30 TAC 350.51(c) and (e), respectively.

In addition, please note that if initially reporting a case of groundwater contamination to the TCEQ, the TCEQ requires the concurrent submittal of a *Drinking Water Survey Report* (DWSR), as a stand-alone document. The TCEQ uses the report primarily to comply with Texas Water Code (TWC), Section 26.408. Section requires the TCEQ, within 30 days of the date the TCEQ receives notice or otherwise becomes aware of groundwater contamination, to notify owners and users of private drinking water wells that may be affected by the groundwater contamination (i.e., groundwater ingestion standards exceeded). Additional information regarding the preparation and submittal fo the DWSR and requirements of TWC Section 26.408 may be obtained at the TCEQ website at: https://www.tceq.texas.gov/remediation/twc26_408.html.

Please amend the applicable sections of the APAR to provide the supporting information documenting the results of the groundwater assessment activities (i.e., Section 2, 3, 5, and supporting appendices) and, if required, the stand alone DWSR.

3. Section 2.2 (Field Receptor Survey): The APAR must be amended to provide supporting information documenting the performance of the required 500-ft field receptor survey. Refer to Section 2.2 of the APAR instructions for clarification of the specific documentation required to be presented in the APAR.

4. Section 2.6 (Exposure Pathways): The text of the APAR is noted to convey information as to the stability/persistence of contaminants in specific media of concern (i.e., soil, sediment, air, etc.) in response to specific soil conditions; however, the APAR lacks supporting information documentation the behavior of contaminants specific to conditions at the site (e.g., site specific soil pH evaluation, site-specific leachate analytical results, etc.).

5. Section 2.5 (Groundwater Resource Classification): The APAR lacks the completion of a groundwater resource classification (Class 1, 2, or 3) of the uppermost saturated zone(s), potentially affected groundwater-bearing units, etc. Please refer to Section 2.5 of the instructions of the APAR form to properly address this issue.

6. Section 2, Attachment 2A (Tier 1 Ecological Exclusion Criteria Checklist): The APAR lacks the completion of the required Tier 1 Ecological Exclusion Criteria Checklist. Please refer to Section 2, Attachment 2A of the instructions of the APAR form to properly address this issue.

7. Section 3.2 (Assessment Strategy): All information provided in the APAR presents a summary of existing sampling performed in the 1990s and information based on a site reconnaissance conducted on November 20, 2009, as part of a Phase I Environmental Site Assessment. Although the prior areas subject to analytical sampling have been incorporated into the APAR as historic analytical data relevant to the assessment of the site, the areas previously sampled should be considered for re-assessment to confirm current levels of concentrations to support evaluation of proposed remedial actions. Please note that the collection and analysis of additional environmental samples will be required to document conformance with the analytical data usability requirements specific to the TRRP regulations applicable to assessment/response actions associated with the site. Please refer to RG-366/TRRP-13 (Review and Reporting of COC Concentration Data under TRRP), Revised May 2010 for additional guidance regarding this topic. This document can be obtained on the TCEQ's website at: *http://www.tceq.state.tx.us/remediation/trrp/guidance.html*.

8. APAR Executive Summary (tables for Assessment, and Remedy Decision), Conclusions/Recommendations, and Appendix 1 (Notifications): The APAR indicates

impacts of contamination issues associated with the property extend to off-site properties. Please note 30 TAC 350.55 (Notification Requirements) of the TRRP regulations require specific notification requirements applicable to off-site property owners during assessment/cleanup activities performed in accordance with 30 TAC 350 (TRRP). Concurrence of any proposed response action proposals related to the cleanup of off-site contamination issues must be obtained from applicable off-site property owners prior to implementation. In addition, proof of compliance with the requirements of 30 TAC 350.55(d) and/or (e) must be submitted to the TCEQ certifying the required notifications have been completed within the specified number of calendar days of the date the notices are due. Supporting documentation demonstrating compliance with the notification requirements of 30 TAC 350.55 should be captured in Appendix 1 of the APAR form.

9. Section 4 (Soil Assessment):

- Based on our review, the APAR does not provide a sufficient soil assessment demonstrating compliance with the lateral and vertical extent delineation requirements of 30 TAC 350.51(c) and (d) of TRRP, respectively, with respect to petroleum hydrocarbons, solvents, PCBs and RCRA metals. The APAR must also be amended to document assessment and demonstrate conformance to the federal requirements of 40 CFR 761, Subpart N with respect to PCBs, in particular. [The TCEQ also previously noted the extent delineation issues in comment 1 and 2 of a prior letter issued June 18, 2010 (copy of TCEQ letter provided as an attachment to the APAR)]. The APAR must be amended to provide information verifying the lateral and vertical extent delineation requirements with respect to petroleum hydrocarbons, solvents, PCBs and RCRA metals to document compliance with 30 TAC 350.51(c) and (d) of TRRP and 40 CFR 761, as applicable to PCBs.

- The APAR lacks sufficient assessment/characterization of all potential source areas of contamination on the property. The APAR must be amended to provide additional investigation and characterization of all potential source areas on the property and surface water drainage ditches with respect to petroleum hydrocarbons, solvents, PCBs and RCRA metals to document compliance with 30 TAC 350.51(b) of TRRP.

- The APAR notes that surface water runoff from the property is noted to have a potential to affect surface soils and drainage ditches (and potentially surface water) on-site and extending to off-site areas. TCEQ also indicated in comment 5 of a prior letter issued June 18, 2010, the need to demonstrate that drainage ditches are not impacting surface water (copy of TCEQ letter provided as an attachment to the APAR)]. The APAR must be amended to provide supporting assessment information to document the characterization, assessment and delineation of contamination of all media of concern (e.g., soil, sediment, surface water, etc.) present in drainage ditches on-site and extending to off-site areas with respect to petroleum hydrocarbons, solvents, PCBs and RCRA metals.

For future reference, starting January 1, 2016, the TCEQ Remediation Division requires the use of United States Environmental Protection Agency (USEPA) SW846 Method 5035A, Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples, as amended, for the collection and preparation of solid samples for volatile organic compound (VOC) analysis using purge-and-trap technology. The TCEQ Remediation Division guidance on Method 5035 has been updated and is available at the TCEQ's website at: https://www.tceq.texas.gov/assets/public/remediation/tceq-rem-guidance-for-epa-method-5035.pdf. In addition, please be aware that the TCEQ's Tier 1 Protective

Concentration Levels (PCLs) and supporting tables have been revised December 2015. The most current tables can be obtained from the TCEQ's website at: http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html. Please ensure the most current TCEQ PCLs are being used for comparative purposes.

TCEQ letter dated January 12, 2016
ENCLOSURES
TCEQ SWR No. 80951

**TCEQ Comments to *Response to TCEQ letter dated November 16, 2015,* dated December 16, 2015 *(submitted via email from Mr. Danny Doyle to the TCEQ on 12/16/2015)***

1. The TCEQ continues to lack adequate information to document achievement of closure of registered waste management units (WMU) and industrial solid waste registration (SWR) associated with the property (SWR No. 80951). Although a unit closure request was previously submitted by representatives of F.J. Doyle to the TCEQ as recently as May 27, 2015, information documenting the regulatory closure of WMU No. 001 and 002 in accordance with the requirements of 30 TAC 335.8 continues to remain outstanding.

   Comments regarding TCEQ review of the May 27, 2015 WMU closure request were previously conveyed to representatives of F.J. Salvage on November 16, 2015. The TCEQ's November 16, 2015 letter required the submittal of an *Amended Closure Report for WMU No. 001 and 002* to the TCEQ for technical review within forty-five (45) days of the TCEQ's letter. Although the TCEQ acknowledges receipt of an email on December 16, 2015 from Mr. Danny Doyle in response to the TCEQ's November 16, 2015 letter, the email response did not provide the *Amended Closure Report* nor did the response provide a path forward/schedule for submittal of the *Amended Closure Report*. The amended report is required to document the closure of WMU No. 001 and 002 in accordance with the 30 TAC 335.8 and support the SWR inactivation request for the property.

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Jon Niermann, *Commissioner*
~~Richard A. Hyde, P.E., *Executive Director*~~

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

November 16, 2015

Mr. Danny Doyle
F.J. Salvage
(b) (6) [redacted]
Leonard, TX 75452

Re: TCEQ Comments to *Unit Closure Request and Facility Registration Inactivation Request*, dated May 27, 2015
**Waste Management Unit No. 001, 002 and 003**
Former F. J. Doyle Salvage Transformers property located at (b) (6) [redacted] (b) (6) (905 N. Poplar Street), Leonard (Fannin County), TX;
TCEQ SWR No. 80951; EPA ID No. TXD980865109; Customer No. CN600359095;
Regulated Entity No. RN100649227

Dear Mr. Doyle:

The Texas Commission on Environmental Quality (TCEQ) is in receipt of your unit closure and facility inactivation request dated May 27, 2015. The document was received at our office on October 21, 2015, and was submitted in response to TCEQ letter dated March 30, 2015, requesting a remediation status update of the waste management unit closure report and issues related to the assessment and cleanup of contamination associated with the facility. The TCEQ is also currently in receipt of an Affected Property Assessment Report (APAR) submitted by representatives of F.J. Salvage to document the assessment of contamination associated with the property on-site and to areas off-site in accordance with the requirements of 30 Texas Administrative Code (TAC) 350. *Please note the formal technical review of the APAR will be conducted by the TCEQ shortly.*

Based on our review, the May 27, 2015 request provides adequate information to support the closure of WMU No. 003 (Miscellaneous Storage Containers). *A copy of this letter has been forwarded to the TCEQ Registration and Reporting Section to update your Notice of Registration (NOR) to reflect the closure of WMU No. 003.* For questions regarding the NOR, please contact the Registration and Reporting Section at (512) 239-6413.

The TCEQ; however, requires the submittal of additional supporting information to document closure of the WMU No. 001 (Miscellaneous Storage Containers) and 002 (Thermal Processing Unit). Please provide the following additional information to support the closure of WMU No. 001 and 002:

1. WMU No. 001: The May 27, 2015 WMU closure report does not provides supporting documentation demonstrating the removal and proper disposal of the referenced 300 gallon container and 55 gallon drums associated with the unit. The TCEQ requires additional supporting information documenting the removal/disposal of all containers/drums associated with the unit. Please ensure the photographs capture views of the interior areas of the unit. The TCEQ also notes the presence of a total of 6-55 gallon drums shown in one of the pictures referenced in the May 27, 2015 report either

located within the concrete bermed area and also on pavement surrounding the bermed area. Please ensure all containers/drums either inside the bermed area of the unit or on the pavement adjacent to the unit have been properly removed and disposed. *Please provide post removal inspection and photographic documentation to support the removal/disposal activities and copies of supporting legal records (e.g., receipts, waste manifests, bill of lading, etc.) documenting the proper disposal of the containers/drums and any material currently stored within the containers/drums).*

2. WMU No. 002: The supporting photograph provided in the report apparently shows the floor where WMU No. 002 was previously located. The TCEQ requires additional supporting information documenting the location of the photograph with respect to physical surroundings within the building and specific details of the building construction specifications where the unit was previously located. *Please provide additional photographs showing the current conditions of the interior of the building in reference to the general location of the unit. In addition, please clarify what the floor of the building consists of and provide and provide a figure of the interior area of the building depicting the former location of the furnace in reference to the locations of your supporting photographs.*

*Please submit an Amended Closure Report for WMU No. 001 and 002 addressing the above referenced comments to the TCEQ for technical review within forty-five (45) days of the date of this letter.*

Questions concerning this letter should be directed to me at (512) 239-6542. When responding by mail, please submit an original and one copy of all correspondence and reports to the TCEQ Remediation Division at Mail Code MC-127 with an additional copy submitted to the local TCEQ Region Office.

Sincerely,

Eleanor T. Wehner

Eleanor T. Wehner, P.G.
Sr. Project Manager
VCP-CA Section
Remediation Division
Texas Commission on Environmental Quality

ETW/mdh

cc: (b) (6) [redacted] Leonard, TX 75452

Mr. Sam Barrett, Waste Section Manager, TCEQ Region 4 Office, Dallas/Fort Worth

Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Zak Covar, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

March 30, 2015

~~CERTIFIED MAIL~~

91 7199 9991 7033 2775 5188

Mr. Danny Doyle
F.J. Salvage
(b) (6) [redacted]
Leonard, Texas 75452

Re: *Final Request for Remediation Status Update*
Waste Management Unit Closure Report and Contamination issues associated with the former F. J. Doyle Salvage Transformers property located at (b) (6) [redacted] (905 N. Poplar Street), Leonard (Fannin County), TX;
TCEQ SWR No. 80951; EPA ID No. TXD980865109; Customer No. CN600359095; Regulated Entity No. RN100649227

Dear Mr. Doyle:

On January 26, 2007, the Texas Commission on Environmental Quality (TCEQ) issued a letter regarding required environmental corrective actions at the above referenced site. A second request for status update letter was also issued on September 5, 2008. Both letters referenced the need to submit a Closure Report for three (3) waste management units (WMU) listed on the above referenced registration pursuant to 30 Texas Administrative Code (TAC) 335.8. In order to close a WMU, the owner/operator must remove all waste from the WMU and demonstrate that a release from the WMU to the environment has not occurred. Additionally, the TCEQ letters provided directives requiring representatives of F.J. Salvage to assess the full nature and extent of identified contamination associated with the facility and implement required cleanup of the contamination in accordance with 30 TAC 350 of the Texas Risk Reduction Program (TRRP) rule. The TCEQ required the submittal of an Affected Property Assessment Report pursuant to 30 TAC 350.51 of TRRP to initially fully assess the contamination issues associated with the property. To date the TCEQ has not received any information or response to our letters indicating that the required actions have been implemented, performed or completed. The TCEQ has attached a copy of the TCEQ letter(s) dated January 26, 2007 and September 5, 2008 for your reference.

As owner of the above reference property, you are responsible for ensuring that documents and work are scheduled and completed within the prescribed time frames. Failure to submit and/or implement the required WMU Closure and TRRP assessment/cleanup actions to address the contamination associated with the property within the schedule set by the TCEQ is a violation of agency regulations and potentially subject to enforcement actions under Chapter 7 of the Texas Water Code. You are hereby directed to comply with all TCEQ corrective action directives and

subsequent requests previously referenced in TCEQ letter(s) dated January 26, 2007 and September 5, 2008. **Please provide a response providing a status update, schedule and workplan for submittal of the required APAR to assess the contamination associated with the property and the required Closure Report for the three waste management units associated with TCEQ Solid Waste Registration 80951 within thirty (30) days of the date of the letter.**

*Failure to submit this information within thirty (30) days of the date of the letter is a violation of TCEQ regulations and may result in issuance of a Notice of Violation (NOV).* Failure to comply with any of these deadlines can potentially result in a Notice of Enforcement and an Enforcement Action Referral.

An original and one copy of the above referenced response must be submitted to the TCEQ Remediation Division at the letterhead address using Mail Code MC-127. An additional copy should be submitted to the TCEQ Region 4 Office in Dallas/Fort Worth located at 2309 Gravel Drive, Fort Worth, TX 76118-6951. Your response must be submitted within thirty (30) days from the date of this letter. The facility name, location and identification number(s) in the TCEQ reference line above should be included in your response. Questions concerning this letter should be directed to me at (512) 239-6542.

Sincerely,

Eleanor T. Wehner

Eleanor T. Wehner, P.G.
Sr. Project Manager
VCP-CA Section
Remediation Division
Texas Commission on Environmental Quality

ETW/mdh

Enclosure(s): TCEQ letter directives issued to representatives of F. J. Salvage on January 26, 2007 and September 5, 2008

cc: Mr. James Sales, Regional PCB Coordinator, EPA Region 6, 1445 Ross Avenue, Suite 1200, Mail Code: 6PD, Dallas, TX 75202-2733

Mr. Sam Barrett, Waste Section Manager, TCEQ Region 4 Office, Dallas/Fort Worth

SSchrei

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

September 5, 2008

**CERTIFIED MAIL**
91 7108 2133 3935 1880 9979

Mr. Danny Doyle
F. J. Doyle Salvage
(b) (6) [redacted]
Leonard, Texas 75452

Re: **Second Request for Remediation Status Update**
F. J. Doyle Salvage Transformers, TCEQ SWR No. 80951

Dear Mr. Doyle:

The Texas Commission on Environmental Quality (TCEQ) has conducted a review of our Central Records file to determine the status of environmental activities associated with the above referenced site. According to our file review, the TCEQ's letter dated January 26, 2007, requested submittal of a Unit Closure Report and an Affected Property Assessment Report. Based on our review, the TCEQ has not received either of these requested documents. The TCEQ has attached a copy of the TCEQ letter dated January 26, 2008 for your reference.

The F. J. Doyle Salvage Transformers facility is advised that failure to comply with all TCEQ corrective action directives and subsequent requests, including the specified time frames, may result in the initiation of formal enforcement action by the TCEQ. **The requested Unit Closure Report and Affected Property Assessment Report must be provided within fifteen (15) days of the date of this letter.**

An original and one copy of the above referenced response must be submitted to the TCEQ Remediation Division at the letterhead address using Mail Code MC-127. An additional copy should be submitted to the TCEQ Region 4 Office in Fort Worth, Texas. The facility name, location and identification number(s) in the TCEQ reference line above should be included in your response. Questions concerning this letter should be directed to me at (512) 239-5454.

Sincerely,

Sarah A. Schreier, P. G., Project Manager
Team 1, Environmental Cleanup Section II
Remediation Division

SAS/jhm

Enclosure: TCEQ's letter to Mr. Danny Doyle dated January 26, 2007

cc: Waste Program Manager, TCEQ Region 4 Office, Fort Worth, Texas
Mr. Danny Doyle , F. J. Doyle Salvage, P. O. Box 312, Leonard, Texas 75452-0312

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
Martin A. Hubert, *Commissioner*
Glenn Shankle, *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

January 26, 2007

Mr. Danny Doyle
F. J. Doyle Salvage
P. O. Box 312
Leonard, Texas 75452-0312

Re: Unit Closure Request and Assessment Request
F. J. Doyle Salvage Transformers
SWR No. 80951

Dear Mr. Doyle:

The Texas Commission on Environmental Quality (TCEQ) has received your letter dated 23 October 2006 in response to our 14 July 2006 letter requesting a Unit Closure Report for three Waste Management Units still listed as active at the F. J. Doyle Salvage Transformers facility at 305 E. Cottonwood, Leonard, TX 75425. In your response, you requested additional clarification of what information needed to be submitted to the TCEQ. Specifically, you asked for clarification on what a waste management unit was, and indicated that you needed some guidance on where to find a Notice of Registration number.

Generally, a waste management unit is any area where waste is placed. Examples of waste management units include surface impoundments; waste piles; land treatment areas; landfill cells; incinerators; tanks and their associated piping and underlying containment system; and container storage areas. A container alone is not a waste management unit; the unit includes containers and the land or pad upon which they are placed.

For your reference I have attached a report containing Notice of Registration information relevant to this facility. Page 3 of the report describes what waste management units are listed as "active" at this location. Page 2 describes the wastes that were stored or managed in each waste management unit. My phone number and email are in the last paragraph of this letter; *please* contact me if you have questions about this attachment.

The Notice of Registration number is simply a reference number used assigned to each unit at a facility for ease of reference. It is typically a three digit number found on the far left of the unit description in the Notice of Registration (see page 3 of the attached report). In this case your waste management unit Notice of Registration numbers are: 001 for various storage containers on a concrete pad, 002 for the thermal process unit, and 003 for the dumpster.

Dallas/Fort Worth Office at 2309 Gravel Drive, Fort Worth, Texas, 76118-6951. Your response must be received on or before May 31, 2007. The facility name, location and identification number(s) in the reference line of this letter should be included in your response.

Please contact me at (512)239-5454, or email at sschreie@tceq.state.tx.us if you need any additional information or clarification, or if you wish to discuss the due date. I look forward to speaking with you in the near future.

Sincerely,

Sarah A. Schreier, P. G., Project Manager
Team 1, Environmental Cleanup Section 2
Remediation Division
Texas Commission on Environmental

SS/cjh

Enclosure(s): Enclosure 1 – Notice of Registration
Enclosure 2 – Health Consultation, Doyle Transformer Site, Leonard, Texas, Fannin County (June 29, 2000)

cc: Mr. Danny Doyle, (b) (6) [redacted] Leonard, TX 75452
Waste Program Manager, TCEQ Region 4 Office, Dallas/Fort Worth

*** Texas Commission on Environmental Quality ***
Notice of Registration
Industrial and Hazardous Waste

Date: 03/26/2015

)51 F J DOYLE

lid Waste Registration #: 80951 | EPA ID:TXD980865109 | CN: CN600359095 | RN: RN100649227

mpany Name: F J DOYLE SALVAGE .ANSFORMERS | Region: 4 | Initial Registration Date: 07/21/1993

te Name: F J DOYLE | County: 147 FANNIN | Last Amendment Date: 04/24/2006

te Location: (b) (6) [redacted] :ONARD, TX | Land Type: PRIVATE | Last Update Date: 04/27/2006

imary Contact: DOYLE, F J | Title: ENVIRONMENTAL MANAGER

ailing Address: PO BOX 312 | Phone:903-587-3342

LEONARD, TX, 75452-0312

egistration Status: CLOSURE REQUEST | HW Permit: | IW Permit: | MW Permit:

egistration Type: GENERATOR,TRANSPORTER

lazardous Waste Generation Type:

ransporter Business Type: Transport own waste only

ransport Waste Class: 1

Jniversal Waste Activity:

Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more):

Destination Facility for Universal Waste:

NAICS Code:

Tax ID: 0

*** Texas Commission on Environmental Quality ***
Notice of Registration
Industrial and Hazardous Waste

80951 F J DOYLE

Owner Information

Name: F J DOYLE SALVAGE TRANSFORMERS,

Phone: 903-587-3342

Address: PO BOX 312
LEONARD, TX, 75452-0312

Operator Information

Billing Contact:

Title:

As of 04/24/2006 -

The next unassigned sequence number for WASTES is 0004.

The next unassigned sequence number for UNITS is 004.

80951 F J DOYLE

**** WASTE INFORMATION ****

| Texas Waste Code | Waste Class | Status | Waste Status Code Change Date | Mixed Radioactive | TCEQ Audit Complete | Waste Update Date | Inactive Reason |
|---|---|---|---|---|---|---|---|
| ****** Active Wastes ****** | | | | | | | |
| 00012061 | 1 | Active | | N | No | 9/8/11 | |

Waste Description: Used oil from non-PCB Transformers being scrapped out for salvage; initial generation: 1/86
Date of Generation: 7/27/93

Texas Form Code: 206 - Waste oil

EPA Hazardous Waste Numbers: None
Current Management Units: 22 - Miscellaneous Storage Containers: 001, OFF-SITE
Origin Codes: 3 - Derived from on-site management of a nonhazardous waste
NAICS Code:
New Chemical Substance: N

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 00023041 | 1 | Active | | N | No | 9/8/11 | |

Waste Description: Ash residue from furnace used to remove varnish from copper wire; initial generation: 1/86
Date of Generation: 7/27/93

Texas Form Code: 304 - Other 'dry' ash, slag or thermal residue

EPA Hazardous Waste Numbers: None
Current Management Units: 08 - Thermal Processing Unit, other than Incinerator: 002, OFF-SITE
Origin Codes: 3 - Derived from on-site management of a nonhazardous waste
NAICS Code:
New Chemical Substance: N

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 00039012 | 2 | Active | | N | No | 9/8/11 | |

*** Texas Commission on Environmental Quality ***
Notice of Registration
Industrial and Hazardous Waste

80951 F J DOYLE

| Texas Waste Code | Waste Class | Status | Waste Status Code Change Date | Mixed Radioactive | TCEQ Audit Complete | Waste Update Date | Inactive Reason |
|---|---|---|---|---|---|---|---|
| ****** Active Wastes ****** | | | | | | | |

Waste Description: General plant refuse from office and shop
Date of Generation: 7/27/93
Texas Form Code: 901 - Plant production refuse

EPA Hazardous Waste Numbers: None
Current Management Units: 22 - Miscellaneous Storage Containers: 003, OFF-SITE
Origin Codes: 1 - Generated on-site from a product process or service activity
NAICS Code:
New Chemical Substance: N

| Texas Waste Code | Waste Class | Status | Waste Status Code Change Date | Mixed Radioactive | TCEQ Audit Complete | Waste Update Date | Inactive Reason |
|---|---|---|---|---|---|---|---|
| ** No Longer Generated Wastes ** | | | | | | | |

80951 F J DOYLE

**** UNITS AT THIS SITE MANAGING WASTE ****

| WMU Sequence Number | Unit Capacity | Capacity UOM | Unit Status | Date of Unit Regis | Class of Waste from Offsite | UIC Permit Number | Unit Number on Permit | Unit Update Date | Deed Record Date |
|---|---|---|---|---|---|---|---|---|---|
| ** 'Active', 'Closure Pending' & 'Closure Request' Units ** | | | | | | | | | |
| 001 | | | CLOSURE REQUEST | 4/24/06 | | | | 9/14/11 | |

Unit Type: Miscellaneous Storage Containers
Unit Regulatory Status: 05 Non-Hazardous Regulated
Unit Description: Various storage containers 1 x375 gallon, 2 x 500 gallon and 55 gallon drums. Stored on concrete pad
Billing Class:
System Type Cd: 141 Storage

Wastes Currently Managed in Unit: 00012061 Used oil from non-PC
Wastes Previously Managed in Unit: None

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 002 | | | CLOSURE REQUEST | 4/24/06 | | | | 9/14/11 | |

Unit Type: Thermal Processing Unit, other than Incinerator
Unit Regulatory Status: 05 Non-Hazardous Regulated
Unit Description: High temperature oven to burn varnish off copper
Billing Class:
System Type Cd: 010 Metals recovery including retorting, smelting, chemical, etc.

Wastes Currently Managed in Unit: 00023041 Ash residue from fur
Wastes Previously Managed in Unit: None

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 003 | | | CLOSURE REQUEST | 4/24/06 | | | | 9/14/1 | |

951 F J DOYLE

| MU quence mber | Unit Capacity | Capacity UOM | Unit Status | Date of Unit Regis | Class of Waste from Offsite | UIC Permit Number | Unit Number on Permit | Unit Update Date | Deed Record Date |
|---|---|---|---|---|---|---|---|---|---|

'Active', 'Closure Pending' & 'Closure Request' Units **

Unit Type: Miscellaneous Storage Containers

nit Regulatory Status: 05 Non-Hazardous Regulated

Unit Description: Dumpster, 4 yd for accumulation of plant trash

Billing Class:

System Type Cd: 141 Storage

astes Currently Managed in Unit: 00039012 General plant refuse

astes Previously Managed in Unit: None

| MU quence mber | Unit Capacity | Capacity UOM | Unit Status | Date of Unit Regis | Class of Waste from Offsite | UIC Permit Number | Unit Number on Permit | Unit Update Date | Deed Record Date |
|---|---|---|---|---|---|---|---|---|---|

'Inactive', 'Closed', 'Post Closure Care', 'Never Built' & 'Not Required' Units **

| U uence nber | Unit Capacity | Capacity UOM | Unit Status | Date of Unit Regis | Class of Waste from Offsite | UIC Permit Number | Unit Number on Permit | Unit Update Date | Deed Record Date |
|---|---|---|---|---|---|---|---|---|---|

Not Yet Built' & 'Under Construction' Units **

Enclosure 2

Health Consultation, Doyle Transformer Site, Leonard, Texas, Fannin County (June 29, 2000)

# BACKGROUND AND STATEMENT OF ISSUES

The Texas Natural Resource Conservation Commission (TNRCC) requested that the Texas Department of Health (TDH) evaluate the potential health risks associated with exposure to polychlorinated biphenyls (PCBs) in soil on and near the Frank J. Doyle Transformer site in Leonard, Fannin County, Texas. The site consists of approximately one-half acre surrounded by a six-foot wooden fence and is an active registered salvage yard that receives and processes used power transmission transformers for recoverable metals [1]. Polychlorinated biphenyls were widely used as coolants in transformers before they were banned in 1977 [2]. There is conflicting information as to whether transformers still are being processed on the site.

The site is bordered to the north by a residential area, to the east by Leonard High School, to the south by an alleyway and a residence, and to the west by the owner's residence. The alleyway is used infrequently and is covered by a layer of gravel. A day care center, which contains has outside play areas for children, is located southwest of the site across the alley.

As a result of residential concerns regarding exposures to PCBs in 1995 and in 1998, the Environmental Protection Agency (EPA) and TNRCC collected soil samples on and around the facility. Samples were collected on the site, in the Doyle residential yard adjacent to the site, in the alleyway, in the residential yard south of the site, in drainage ditches downgradient of the site, in the day care center yard, and in the high school yard (Table 1, Figure 1).

Surface-soil samples (0-6") from the residential yard south of the site and from the owner's residential yard contained maximum PCB concentrations of 27.9 milligrams-PCB/kilogram-soil (mg/kg) and 85 mg/kg, respectively. The maximum concentrations of PCBs in surface-soil samples from all other locations off-site ranged from non-detectable to 5.7 mg/kg. Three on-site surface soil samples contained 2.0 to 10.4 mg PCB/kg soil. Sub-surface soil samples (6-24") revealed elevated levels of PCBs on the site (maximum 2,300 mg/kg), in the alleyway (maximum 4,100 mg/kg), and in the drainage ditches downgradient from the site (maximum 37.7 mg/kg) (Figure 1).

In addition to soil samples, three groundwater samples (and one duplicate) were collected from two city of Leonard municipal water wells and one privately owned drinking water well. Samples were analyzed for pesticides, polychlorinated biphenyls (PCBs), semi-volatile and volatile organic compounds, and metals. None of the groundwater samples contained significant quantities of pesticides, PCBs, semi-volatile and volatile organic chemicals or metals.

# DISCUSSION

## Health Assessment Comparison Values

In order to assess the potential health risks associated with soil exposure to a specific PCB, Aroclor 1260, we compared the reported concentrations to health assessment comparison (HAC) values for non-carcinogenic and carcinogenic endpoints (see toxicological evaluation section below). Currently, there are no HAC values specifically for Aroclor 1260 [3]; therefore, we based the non-cancer comparison value for Aroclor 1260 on the Agency for Toxic Substances and Disease Registry's (ATSDR's) minimal risk level (MRL) for the structurally similar compound Aroclor 1254. The MRL is an estimate of a daily human exposure to a contaminant that is unlikely to cause adverse non-cancer health effects over a lifetime. We based the cancer risk comparison value for Aroclor 1260 on the U.S. Environmental Protection Agency's (EPA's) cancer slope factor for PCBs as a class of chemicals and an estimated excess lifetime cancer risk of one-in-one million for persons exposed for 30 years.

Based on average soil ingestion rates of 100 mg/day for 70 kg adults and 200 mg/day for 15 kg children, HAC values for adults and children (14 mg/kg and 1.5 mg/kg) were exceeded in surface soil samples from both residences (Table 1). While exceeding a HAC value does not imply that the contaminant represents a public health threat, it does suggest that site-specific exposure evaluation of the contaminant warrants further consideration.

## Polychlorinated Biphenyls (PCBs)

### Background

PCBs are a group of synthetic organic chemicals that contain 209 individual chlorinated biphenyl compounds (known as congeners) with varying harmful effects. They are either oily liquids or solids and are colorless, odorless, and tasteless. There were seven common types of commercially available PCB mixtures, also known as "Aroclors," which constitute 98% of PCBs sold in the United States since 1970. The name Aroclor 1254 means that the molecule contains 12 carbon atoms (first two digits) and approximately 54% chlorine by weight (second two digits). The more highly chlorinated Aroclors have been found to have greater potential for adverse health effects in humans and animals. There are no known natural sources of PCBs in the environment. Typical concentrations in soil are less than 0.01 to 0.04 mg/kg [3].

Because they don't burn easily and are good insulating materials, PCBs have been used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacture of PCBs stopped in the United States in 1977 because of evidence that they build up in the environment and cause harmful health effects. Today, PCBs can be released into the environment from poorly maintained hazardous waste sites that process used electrical transformers or by burning of organic wastes in municipal and industrial incinerators.

### Environmental Fate

PCBs released into the environment bind strongly to soil and sediments and may remain there for several years to many decades. Because of the strong adherence to soil, migration of the highly

Other effects observed in animals include increased hepatic microsomal enzyme induction, liver enlargement, fat deposition, fibrosis, and necrosis, increased cholesterol (animals), thyroid enlargement with decreased production of thyroid hormones, increased adrenal gland production reported as an adaptive response to stress, facial edema, acne, fingernail loss, loss of hair in monkeys, weight loss, and kidney damage. However, the levels necessary to produce those effects were very high and it is not known if the same effects would happen in people chronically exposed to lower levels [3].

Inhalation of PCBs by workers employed in capacitor facilities has been observed to cause upper respiratory tract or eye irritation, cough, headaches, and tightness of the chest. Hepatic effects, such as increased levels of serum liver-related enzymes may be related to inhalation of PCB particles [4].

Weak correlations between PCB exposure and depressed immunological function, specifically a reduction in natural killer (NK) cells, have been found in humans consuming PCB-contaminated fish; however, these studies are confounded by the coinciding presence of DDT, which also has been associated with affecting the immune system.

The Agency for Toxic Substances and Disease Registry (ATSDR) has established a chronic oral minimal risk level (MRL) of 0.00002 mg/kg/day for Aroclor 1254 based on a study in which a decrease in functioning of the immune system was observed in rhesus monkeys fed with the compound in a mixture of corn oil for a period of 55 months. The MRL is an estimate of daily human exposure to a contaminant that is unlikely to cause adverse health effects over a lifetime. At 55 months, there was a significant dose-related decrease in immunoglobulin titers in response to challenges with sheep red blood cell antigens. The lowest dose level tested, 0.005 mg/kg/day, was considered the lowest observable adverse effects level (LOAEL) for decreased antibody response. Uncertainty factors used in the MRL derivation include 10 for use of a LOAEL, 3 for extrapolation from animals to humans, and 10 for human variability. Studies in species other than monkeys have given inconclusive immunologic findings in that changes in some immune parameters were sporadic, generally not dose-related, or occurred at much higher levels [3].

Cancer Effects

Studies in animals show that PCBs containing 60% chlorine by weight are clearly carcinogenic and indicate differences in the carcinogenic potential of other PCB mixtures, based on the degree of chlorination. Available data suggest that the carcinogenic potency decreases with the percent chlorination. Hepatocellular (liver) carcinomas developed in rats fed an estimated dose of 5 mg/kg/day Aroclor 1260 for 21 months [3].

Animals treated intermediately or chronically with Aroclors 1254 or 1260 showed statistically increased incidences of liver adenomas and carcinomas. To investigate hepatic tumor progression after exposure has stopped, groups of rats were exposed for 52 weeks, then exposure was discontinued for an additional 52 weeks. For Aroclor 1260, the "stop-study" tumor incidences were greater than those of the lifetime study, indicating persistent biological activity after exposure stops for the more highly chlorinated Aroclors. Other cancers observed in animals include thyroid gland carcinomas, adenocarcinoma of the stomach, leukemia and lymphoma [3].

Table 2. Exposure dose matrix for different potential exposure scenarios. Exposure based on ingestion of PCB contaminated soil at each of the two residences where PCB levels exceeded HAC values. Exposure expressed in mg/kg/day.[1]

| | | average daily soil ingestion rate | | | | |
|---|---|---|---|---|---|---|
| weight (kg) | age (years) | 25 mg | 50 mg | 100 mg | 150 mg | 200 mg |
| **Soil concentration = 28 mg/kg Aroclor 1260 (0-6") from the residence immediately south of the site** | | | | | | |
| 15 | 3-6 | 4.6x10-5 | 9.2x10-5 | 1.9x10-4 | 2.8x10-4 | 3.7x10-4 |
| 35 | 10-11 | 2x10-5 | 4x10-5 | 8x10-5 | 1.2x10-4 | 1.6x10-4 |
| 70 | adult | 1x10-5 | 2x10-5 | 4x10-5 | 6x10-5 | 8x10-5 |
| **Soil concentration = 85 mg/kg Aroclor 1260 (0-6") from the Doyle residence** | | | | | | |
| 15 | 3-6 | 1.4x10-4 | 2.8x10-4 | 5.7x10-4 | 8.5x10-4 | 1.1x10-3 |
| 35 | 10-11 | 6.1x10-5 | 1.2x10-4 | 2.4x10-4 | 3.6x10-4 | 4.8x10-4 |
| 70 | adult | 3.0x10-5 | 6.1x10-5 | 1.2x10-4 | 1.8x10-4 | 2.4x10-4 |

[1] Shaded Areas represent scenarios where ATSDR's MRL was exceeded.

## CHILD HEALTH INITIATIVE

ATSDR's Child Health Initiative recognizes that the unique vulnerabilities of infants and children demand special emphasis in communities faced with contamination of their water, soil, air, or food. Children are at greater risk than adults from certain kinds of exposures to hazardous substances emitted from waste sites and emergency events. They are more likely to be exposed because they play outdoors and they often bring food into contaminated areas. They are shorter than adults, which means they breathe dust, soil, and heavy vapors close to the ground. Children also are smaller, resulting in higher doses of chemical exposure per body weight. The developing body systems of children can sustain permanent damage if toxic exposures occur during critical growth stages. Most importantly, children depend completely on adults for risk identification and management decisions, housing decisions, and access to medical care.

We evaluated the potential for children living in the vicinity of the Doyle Transformer site to be exposed to polychlorinated biphenyls at levels of health concern. Currently children are not likely to be chronically exposed to contaminants at this site; however, infrequent contact is possible. Children living at the residence south of the site and at the owner's property could be exposed to PCBs at levels of health concern.

# REFERENCES


1. Texas Natural Resource Conservation Commission, 1998. Screening Site Inspection Report for Doyle Transformer Site, Leonard, Fannin County, Texas. Prepared in cooperation with the U.S. Environmental Protection Agency. May 1998.

2. U.S. Environmental Protection Agency, Integrated Risk Information System, Adobe Acrobat Portable Format Files, 1999.

3. Agency for Toxic Substances and Disease Registry. Toxicological profile for polychorinated biphenyls, Atlanta: ATSDR, Sept. 1997.

4. Brown, D.P. Mortality of workers exposed to polychorinated biphenyls, an update. Arch. Environmental Health. 42 (6): 333-339.

5. Bertazzi, P.A., et.al., Cancer mortality of capacitor manufacturing workers. Am. J. Ind. Med. 11(2): 165-176.

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

June 18, 2010

Mr. Charles R. Robertson
Vice President
Terra-Solve, Inc.
3216 Commander Drive, Suite 103
Carrollton, Texas 75006-2518

Re: Comments to "Request for Additional Information"
Former F.J. Doyle Salvage
(b) (6) [redacted] (905 N. Poplar Street), Leonard, Fannin County, Texas
TCEQ SWR No. 80951; EPA CERCLIS No. TXD980865109; Customer No. CN600359095; Regulated Entity No. RN100649227

Dear Mr. Robertson:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above referenced submittal. A list of the comments is enclosed.

Please call me at (512) 239-4940 if you need additional information or wish to discuss these comments or the due date. Thank you for your cooperation in this matter.

Sincerely,

PLall

Pindy Lall, Project Manager
VCP Team 1, VCP-CA Section
Remediation Division

PSL/jdm

Enclosure: Comments

cc: Mr. Sam Barrett, Waste Program Manager, TCEQ Region 4, Dallas/Fort Worth

TCEQ letter dated June 18, 2010
ENCLOSURE
TCEQ SWR No. 80951

Comments

1. Surface soils need to be delineated horizontally to 1.1 mg/kg for polychlorinated biphenyls (PCBs). Surface soils under Texas Risk Reduction Program (TRRP) are soils at a depth of 0-15 feet. Copper and hexachlorobenzene will also be required to be delineated horizontally.

2. Soil contamination will need to be delineated vertically.
   a. Soil vertical delineation is required to method quantitation limit (MQL) unless a groundwater sample is taken at the site.
   b. If a groundwater sample is taken, the entire soil column can be assumed to be contaminated.

3. If the site enters the Voluntary Cleanup Program (VCP), a groundwater sample will be required.

4. In situations where the entire soil column is assumed to be contaminated, a control (such as a parking lot that serves as an impervious cover) may be implemented to prevent exposure. A parking lot may be utilized as a impervious cover depending on the material used; however, maintenance of the parking lot would be required to ensure the integrity of the parking lot as a control. Any area that is not covered will be required to be removed, decontaminated, and/or controlled by other means.

5. A demonstration that the drainage ditches are not impacting surface water will be necessary.

SSchreier

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

September 5, 2008

**CERTIFIED MAIL**
91 7108 2133 3935 1880 9979

Mr. Danny Doyle
F. J. Doyle Salvage
(b) (6) [redacted]
Leonard, Texas 75452

Re: **Second Request for Remediation Status Update**
F. J. Doyle Salvage Transformers, TCEQ SWR No. 80951

Dear Mr. Doyle:

The Texas Commission on Environmental Quality (TCEQ) has conducted a review of our Central Records file to determine the status of environmental activities associated with the above referenced site. According to our file review, the TCEQ's letter dated January 26, 2007, requested submittal of a Unit Closure Report and an Affected Property Assessment Report. Based on our review, the TCEQ has not received either of these requested documents. The TCEQ has attached a copy of the TCEQ letter dated January 26, 2008 for your reference.

The F. J. Doyle Salvage Transformers facility is advised that failure to comply with all TCEQ corrective action directives and subsequent requests, including the specified time frames, may result in the initiation of formal enforcement action by the TCEQ. **The requested Unit Closure Report and Affected Property Assessment Report must be provided within fifteen (15) days of the date of this letter.**

An original and one copy of the above referenced response must be submitted to the TCEQ Remediation Division at the letterhead address using Mail Code MC-127. An additional copy should be submitted to the TCEQ Region 4 Office in Fort Worth, Texas. The facility name, location and identification number(s) in the TCEQ reference line above should be included in your response. Questions concerning this letter should be directed to me at (512) 239-5454.

Sincerely,

Sarah A. Schreier, P. G., Project Manager
Team 1, Environmental Cleanup Section II
Remediation Division

SAS/jhm

Enclosure: TCEQ's letter to Mr. Danny Doyle dated January 26, 2007

cc: Waste Program Manager, TCEQ Region 4 Office, Fort Worth, Texas
Mr. Danny Doyle , F. J. Doyle Salvage, P. O. Box 312, Leonard, Texas 75452-0312

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
Martin A. Hubert, *Commissioner*
Glenn Shankle, *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

January 26, 2007

Mr. Danny Doyle
F. J. Doyle Salvage
P. O. Box 312
Leonard, Texas 75452-0312

Re: Unit Closure Request and Assessment Request
F. J. Doyle Salvage Transformers
SWR No. 80951

Dear Mr. Doyle:

The Texas Commission on Environmental Quality (TCEQ) has received your letter dated 23 October 2006 in response to our 14 July 2006 letter requesting a Unit Closure Report for three Waste Management Units still listed as active at the F. J. Doyle Salvage Transformers facility at 305 E. Cottonwood, Leonard, TX 75425. In your response, you requested additional clarification of what information needed to be submitted to the TCEQ. Specifically, you asked for clarification on what a waste management unit was, and indicated that you needed some guidance on where to find a Notice of Registration number.

Generally, a waste management unit is any area where waste is placed. Examples of waste management units include surface impoundments; waste piles; land treatment areas; landfill cells; incinerators; tanks and their associated piping and underlying containment system; and container storage areas. A container alone is not a waste management unit; the unit includes containers and the land or pad upon which they are placed.

For your reference I have attached a report containing Notice of Registration information relevant to this facility. Page 3 of the report describes what waste management units are listed as "active" at this location. Page 2 describes the wastes that were stored or managed in each waste management unit. My phone number and email are in the last paragraph of this letter; *please* contact me if you have questions about this attachment.

The Notice of Registration number is simply a reference number used assigned to each unit at a facility for ease of reference. It is typically a three digit number found on the far left of the unit description in the Notice of Registration (see page 3 of the attached report). In this case your waste management unit Notice of Registration numbers are: 001 for various storage containers on a concrete pad, 002 for the thermal process unit, and 003 for the dumpster.

Dallas/Fort Worth Office at 2309 Gravel Drive, Fort Worth, Texas, 76118-6951. Your response must be received on or before May 31, 2007. The facility name, location and identification number(s) in the reference line of this letter should be included in your response.

Please contact me at (512)239-5454, or email at sschreie@tceq.state.tx.us if you need any additional information or clarification, or if you wish to discuss the due date. I look forward to speaking with you in the near future.

Sincerely,

Sarah A. Schreier, P. G., Project Manager
Team 1, Environmental Cleanup Section 2
Remediation Division
Texas Commission on Environmental

SS/cjh

Enclosure(s): Enclosure 1 – Notice of Registration
Enclosure 2 – Health Consultation, Doyle Transformer Site, Leonard, Texas, Fannin County (June 29, 2000)

cc: Mr. Danny Doyle, (b) (6) [redacted] Leonard, TX 75452
Waste Program Manager, TCEQ Region 4 Office, Dallas/Fort Worth

Report Name :
Report Progam : TRACS_EXEC_DIR/ihw_nor_report
Date : 19-jan-2007 10:05:40
User ID : csiegel

Selection Criteria
---
SW Regis. #s : 80951

Selected All Wastes

Sort Criteria: Registration Number
---

*** TEXAS COMMISSION ON ENVIRONMENTAL QUALITY ***

Notice of Registration

Industrial and Hazardous Waste

Date: 01/19/07

80951 F J Doyle Salvage Transformers

**** WASTE INFORMATION ****

| Texas Waste Code | Waste Class | Status | Date of Status | Managed Onsite/ Offsite | Radio-active | TCEQ Audit Complete |
|---|---|---|---|---|---|---|

****** Active Wastes ******

---

00012061 1 Active 07/27/93 On/Off No

Description from Generator: Used oil from non-PCB Transformers being scrapped out for salvage; initial generation: 1/86

Texas Form Code: 206 Waste oil

Current Management Units: Misc Store Container 001

* Origin Codes: 3 From non-haz waste mgmt

---

00023041 1 Active 07/27/93 On/Off No

Description from Generator: Ash residue from furnace used to remove varnish from copper wire; initial generation: 1/86

Texas Form Code: 304 Other "dry" ash, slag, or thermal inorgan. residue

Current Management Units: Thermal Process Unit 002

* Origin Codes: 3 From non-haz waste mgmt

---

00039012 2 Active 07/27/93 On/Off No

Description from Generator: General plant refuse from office and shop

Texas Form Code: 901 Plant production refuse

Current Management Units: Misc Store Container 003

* Origin Codes: 1 Onsite-process/service

---

* The first value is considered the primary value (e.g. primary origin code).

As of 04/24/2006, the next unassigned sequence number for WASTES is 0004.

**Enclosure 2**

Health Consultation, Doyle Transformer Site, Leonard, Texas, Fannin County (June 29, 2000)

# BACKGROUND AND STATEMENT OF ISSUES

The Texas Natural Resource Conservation Commission (TNRCC) requested that the Texas Department of Health (TDH) evaluate the potential health risks associated with exposure to polychlorinated biphenyls (PCBs) in soil on and near the Frank J. Doyle Transformer site in Leonard, Fannin County, Texas. The site consists of approximately one-half acre surrounded by a six-foot wooden fence and is an active registered salvage yard that receives and processes used power transmission transformers for recoverable metals [1]. Polychlorinated biphenyls were widely used as coolants in transformers before they were banned in 1977 [2]. There is conflicting information as to whether transformers still are being processed on the site.

The site is bordered to the north by a residential area, to the east by Leonard High School, to the south by an alleyway and a residence, and to the west by the owner's residence. The alleyway is used infrequently and is covered by a layer of gravel. A day care center, which contains has outside play areas for children, is located southwest of the site across the alley.

As a result of residential concerns regarding exposures to PCBs in 1995 and in 1998, the Environmental Protection Agency (EPA) and TNRCC collected soil samples on and around the facility. Samples were collected on the site, in the Doyle residential yard adjacent to the site, in the alleyway, in the residential yard south of the site, in drainage ditches downgradient of the site, in the day care center yard, and in the high school yard (Table 1, Figure 1).

Surface-soil samples (0-6") from the residential yard south of the site and from the owner's residential yard contained maximum PCB concentrations of 27.9 milligrams-PCB/kilogram-soil (mg/kg) and 85 mg/kg, respectively. The maximum concentrations of PCBs in surface-soil samples from all other locations off-site ranged from non-detectable to 5.7 mg/kg. Three on-site surface soil samples contained 2.0 to 10.4 mg PCB/kg soil. Sub-surface soil samples (6-24") revealed elevated levels of PCBs on the site (maximum 2,300 mg/kg), in the alleyway (maximum 4,100 mg/kg), and in the drainage ditches downgradient from the site (maximum 37.7 mg/kg) (Figure 1).

In addition to soil samples, three groundwater samples (and one duplicate) were collected from two city of Leonard municipal water wells and one privately owned drinking water well. Samples were analyzed for pesticides, polychlorinated biphenyls (PCBs), semi-volatile and volatile organic compounds, and metals. None of the groundwater samples contained significant quantities of pesticides, PCBs, semi-volatile and volatile organic chemicals or metals.

# DISCUSSION

## Health Assessment Comparison Values

In order to assess the potential health risks associated with soil exposure to a specific PCB, Aroclor 1260, we compared the reported concentrations to health assessment comparison (HAC) values for non-carcinogenic and carcinogenic endpoints (see toxicological evaluation section below). Currently, there are no HAC values specifically for Aroclor 1260 [3]; therefore, we based the non-cancer comparison value for Aroclor 1260 on the Agency for Toxic Substances and Disease Registry's (ATSDR's) minimal risk level (MRL) for the structurally similar compound Aroclor 1254. The MRL is an estimate of a daily human exposure to a contaminant that is unlikely to cause adverse non-cancer health effects over a lifetime. We based the cancer risk comparison value for Aroclor 1260 on the U.S. Environmental Protection Agency's (EPA's) cancer slope factor for PCBs as a class of chemicals and an estimated excess lifetime cancer risk of one-in-one million for persons exposed for 30 years.

Based on average soil ingestion rates of 100 mg/day for 70 kg adults and 200 mg/day for 15 kg children, HAC values for adults and children (14 mg/kg and 1.5 mg/kg) were exceeded in surface soil samples from both residences (Table 1). While exceeding a HAC value does not imply that the contaminant represents a public health threat, it does suggest that site-specific exposure evaluation of the contaminant warrants further consideration.

## Polychlorinated Biphenyls (PCBs)

### Background

PCBs are a group of synthetic organic chemicals that contain 209 individual chlorinated biphenyl compounds (known as congeners) with varying harmful effects. They are either oily liquids or solids and are colorless, odorless, and tasteless. There were seven common types of commercially available PCB mixtures, also known as "Aroclors," which constitute 98% of PCBs sold in the United States since 1970. The name Aroclor 1254 means that the molecule contains 12 carbon atoms (first two digits) and approximately 54% chlorine by weight (second two digits). The more highly chlorinated Aroclors have been found to have greater potential for adverse health effects in humans and animals. There are no known natural sources of PCBs in the environment. Typical concentrations in soil are less than 0.01 to 0.04 mg/kg [3].

Because they don't burn easily and are good insulating materials, PCBs have been used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacture of PCBs stopped in the United States in 1977 because of evidence that they build up in the environment and cause harmful health effects. Today, PCBs can be released into the environment from poorly maintained hazardous waste sites that process used electrical transformers or by burning of organic wastes in municipal and industrial incinerators.

### Environmental Fate

PCBs released into the environment bind strongly to soil and sediments and may remain there for several years to many decades. Because of the strong adherence to soil, migration of the highly

Other effects observed in animals include increased hepatic microsomal enzyme induction, liver enlargement, fat deposition, fibrosis, and necrosis, increased cholesterol (animals), thyroid enlargement with decreased production of thyroid hormones, increased adrenal gland production reported as an adaptive response to stress, facial edema, acne, fingernail loss, loss of hair in monkeys, weight loss, and kidney damage. However, the levels necessary to produce those effects were very high and it is not known if the same effects would happen in people chronically exposed to lower levels [3].

Inhalation of PCBs by workers employed in capacitor facilities has been observed to cause upper respiratory tract or eye irritation, cough, headaches, and tightness of the chest. Hepatic effects, such as increased levels of serum liver-related enzymes may be related to inhalation of PCB particles [4].

Weak correlations between PCB exposure and depressed immunological function, specifically a reduction in natural killer (NK) cells, have been found in humans consuming PCB-contaminated fish; however, these studies are confounded by the coinciding presence of DDT, which also has been associated with affecting the immune system.

The Agency for Toxic Substances and Disease Registry (ATSDR) has established a chronic oral minimal risk level (MRL) of 0.00002 mg/kg/day for Aroclor 1254 based on a study in which a decrease in functioning of the immune system was observed in rhesus monkeys fed with the compound in a mixture of corn oil for a period of 55 months. The MRL is an estimate of daily human exposure to a contaminant that is unlikely to cause adverse health effects over a lifetime. At 55 months, there was a significant dose-related decrease in immunoglobulin titers in response to challenges with sheep red blood cell antigens. The lowest dose level tested, 0.005 mg/kg/day, was considered the lowest observable adverse effects level (LOAEL) for decreased antibody response. Uncertainty factors used in the MRL derivation include 10 for use of a LOAEL, 3 for extrapolation from animals to humans, and 10 for human variability. Studies in species other than monkeys have given inconclusive immunologic findings in that changes in some immune parameters were sporadic, generally not dose-related, or occurred at much higher levels [3].

Cancer Effects

Studies in animals show that PCBs containing 60% chlorine by weight are clearly carcinogenic and indicate differences in the carcinogenic potential of other PCB mixtures, based on the degree of chlorination. Available data suggest that the carcinogenic potency decreases with the percent chlorination. Hepatocellular (liver) carcinomas developed in rats fed an estimated dose of 5 mg/kg/day Aroclor 1260 for 21 months [3].

Animals treated intermediately or chronically with Aroclors 1254 or 1260 showed statistically increased incidences of liver adenomas and carcinomas. To investigate hepatic tumor progression after exposure has stopped, groups of rats were exposed for 52 weeks, then exposure was discontinued for an additional 52 weeks. For Aroclor 1260, the "stop-study" tumor incidences were greater than those of the lifetime study, indicating persistent biological activity after exposure stops for the more highly chlorinated Aroclors. Other cancers observed in animals include thyroid gland carcinomas, adenocarcinoma of the stomach, leukemia and lymphoma [3].

Table 2. Exposure dose matrix for different potential exposure scenarios. Exposure based on ingestion of PCB contaminated soil at each of the two residences where PCB levels exceeded HAC values. Exposure expressed in mg/kg/day.[1]

| | | average daily soil ingestion rate | | | | |
|---|---|---|---|---|---|---|
| weight (kg) | age (years) | 25 mg | 50 mg | 100 mg | 150 mg | 200 mg |
| **Soil concentration = 28 mg/kg Aroclor 1260 (0-6") from the residence immediately south of the site** | | | | | | |
| 15 | 3-6 | 4.6x10-5 | 9.3x10-5 | 1.9x10-4 | 2.8x10-4 | 3.7x10-4 |
| 35 | 10-11 | 2x10-5 | 4x10-5 | 8x10-5 | 1.2x10-4 | 1.6x10-4 |
| 70 | adult | 1x10-5 | 2x10-5 | 4x10-5 | 6x10-5 | 8x10-5 |
| **Soil concentration = 85 mg/kg Aroclor 1260 (0-6") from the Doyle residence** | | | | | | |
| 15 | 3-6 | 1.4x10-4 | 2.8x10-4 | 5.7x10-4 | 8.5x10-4 | 1.1x10-3 |
| 35 | 10-11 | 6.1x10-5 | 1.2x10-4 | 2.4x10-4 | 3.6x10-4 | 4.8x10-4 |
| 70 | adult | 3.0x10-5 | 6.1x10-5 | 1.2x10-4 | 1.8x10-4 | 2.4x10-4 |

[1] Shaded Areas represent scenarios where ATSDR's MRL was exceeded.

## CHILD HEALTH INITIATIVE

ATSDR's Child Health Initiative recognizes that the unique vulnerabilities of infants and children demand special emphasis in communities faced with contamination of their water, soil, air, or food. Children are at greater risk than adults from certain kinds of exposures to hazardous substances emitted from waste sites and emergency events. They are more likely to be exposed because they play outdoors and they often bring food into contaminated areas. They are shorter than adults, which means they breathe dust, soil, and heavy vapors close to the ground. Children also are smaller, resulting in higher doses of chemical exposure per body weight. The developing body systems of children can sustain permanent damage if toxic exposures occur during critical growth stages. Most importantly, children depend completely on adults for risk identification and management decisions, housing decisions, and access to medical care.

We evaluated the potential for children living in the vicinity of the Doyle Transformer site to be exposed to polychlorinated biphenyls at levels of health concern. Currently children are not likely to be chronically exposed to contaminants at this site; however, infrequent contact is possible. Children living at the residence south of the site and at the owner's property could be exposed to PCBs at levels of health concern.

# REFERENCES


1. Texas Natural Resource Conservation Commission, 1998. Screening Site Inspection Report for Doyle Transformer Site, Leonard, Fannin County, Texas. Prepared in cooperation with the U.S. Environmental Protection Agency. May 1998.

2. U.S. Environmental Protection Agency, Integrated Risk Information System, Adobe Acrobat Portable Format Files, 1999.

3. Agency for Toxic Substances and Disease Registry. Toxicological profile for polychorinated biphenyls, Atlanta: ATSDR, Sept. 1997.

4. Brown, D.P. Mortality of workers exposed to polychorinated biphenyls, an update. Arch. Environmental Health. 42 (6): 333-339.

5. Bertazzi, P.A., et.al., Cancer mortality of capacitor manufacturing workers. Am. J. Ind. Med. 11(2): 165-176.

# CERTIFICATION

This Doyle Transformer Site Health Consultation was prepared by the Texas Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the Health Consultation was initiated.

Technical Project Officer, SPS, SSAB, DHAC, ATSDR

The Division of Health Assessment and Consultation, ATSDR, has reviewed this Health Consultation and concurs with its findings.

Chief, State Programs Section, SSAB, DHAC, ATSDR

**DO NOT SEND THIS PAGE**[1]
bcc list (format revised 12/05/2006):

Central Records (MC-199)
IHWCA files (MC-127)

**For data entry:**

| | |
|---|---|
| ARTS COMMUNICATION ID: | **N/A** |
| This letter is (Pick one): | **RESPONSE DUE/LATE LETTER** |
| LBB (04 or 06, and number to count): | N/A |
| Reply from facility needed? If so, give reply due date: | September 22, 2008 |
| Document Review(s) Complete? (Yes/No) | yes |
| ARTS LEGAL PROPERTY: CAS Status value changed for entire facility (Put new status or n/a)[2]? | N/A |
| ARTS PHYSICAL UPDATES (n/a, if not applicable)[3]: Physical Name: | N/A |
| New Physical Status: | N/A |
| For entry into RCRAInfo: Number of units (n/a, if not applicable): | N/A |
| Corrective Action Codes (RFI units/areas) CA- | N/A |
| **or** | |
| Closure Codes (RCRA/Interim Status units) CL- | N/A |

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
Martin A. Hubert, *Commissioner*
Glenn Shankle, *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

January 26, 2007

Mr. Danny Doyle
F. J. Doyle Salvage
P. O. Box 312
Leonard, Texas 75452-0312

Re: Unit Closure Request and Assessment Request
F. J. Doyle Salvage Transformers
SWR No. 80951

Dear Mr. Doyle:

The Texas Commission on Environmental Quality (TCEQ) has received your letter dated 23 October 2006 in response to our 14 July 2006 letter requesting a Unit Closure Report for three Waste Management Units still listed as active at the F. J. Doyle Salvage Transformers facility at 305 E. Cottonwood, Leonard, TX 75425. In your response, you requested additional clarification of what information needed to be submitted to the TCEQ. Specifically, you asked for clarification on what a waste management unit was, and indicated that you needed some guidance on where to find a Notice of Registration number.

Generally, a waste management unit is any area where waste is placed. Examples of waste management units include surface impoundments; waste piles; land treatment areas; landfill cells; incinerators; tanks and their associated piping and underlying containment system; and container storage areas. A container alone is not a waste management unit; the unit includes containers and the land or pad upon which they are placed.

For your reference I have attached a report containing Notice of Registration information relevant to this facility. Page 3 of the report describes what waste management units are listed as "active" at this location. Page 2 describes the wastes that were stored or managed in each waste management unit. My phone number and email are in the last paragraph of this letter; *please* contact me if you have questions about this attachment.

The Notice of Registration number is simply a reference number used assigned to each unit at a facility for ease of reference. It is typically a three digit number found on the far left of the unit description in the Notice of Registration (see page 3 of the attached report). In this case your waste management unit Notice of Registration numbers are: 001 for various storage containers on a concrete pad, 002 for the thermal process unit, and 003 for the dumpster.

Dallas/Fort Worth Office at 2309 Gravel Drive, Fort Worth, Texas, 76118-6951. Your response must be received on or before May 31, 2007. The facility name, location and identification number(s) in the reference line of this letter should be included in your response.

Please contact me at (512)239-5454, or email at sschreie@tceq.state.tx.us if you need any additional information or clarification, or if you wish to discuss the due date. I look forward to speaking with you in the near future.

Sincerely,

Sarah A. Schreier, P. G., Project Manager
Team 1, Environmental Cleanup Section 2
Remediation Division
Texas Commission on Environmental

SS/cjh

Enclosure(s): Enclosure 1 – Notice of Registration
Enclosure 2 – Health Consultation, Doyle Transformer Site, Leonard, Texas, Fannin County (June 29, 2000)

cc: Mr. Danny Doyle, (b) (6) [redacted] Leonard, TX 75452
Waste Program Manager, TCEQ Region 4 Office, Dallas/Fort Worth

*** Texas Commission on Environmental Quality ***
Notice of Registration
Industrial and Hazardous Waste

Date: 03/26/2015

)51 F J DOYLE

lid Waste Registration #: 80951 | EPA ID:TXD980865109 | CN: CN600359095 | RN: RN100649227

mpany Name: F J DOYLE SALVAGE .ANSFORMERS | Region: 4 | Initial Registration Date: 07/21/1993

te Name: F J DOYLE | County: 147 FANNIN | Last Amendment Date: 04/24/2006

te Location: (b) (6) [redacted] | Land Type: PRIVATE | Last Update Date: 04/27/2006

:ONARD, TX

imary Contact: DOYLE, F J | Title: ENVIRONMENTAL MANAGER

ailing Address: PO BOX 312 | Phone:903-587-3342

LEONARD, TX, 75452-0312

---

egistration Status: CLOSURE REQUEST | HW Permit: | IW Permit: | MW Permit:

egistration Type: GENERATOR,TRANSPORTER

lazardous Waste Generation Type:

ransporter Business Type: Transport own waste only

ransport Waste Class: 1

Jniversal Waste Activity:

Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more):

Destination Facility for Universal Waste:

NAICS Code:

Tax ID: 0

*** Texas Commission on Environmental Quality ***
Notice of Registration
Industrial and Hazardous Waste

80951 F J DOYLE

Owner Information

Name: F J DOYLE SALVAGE TRANSFORMERS,

Phone: 903-587-3342

Address: PO BOX 312
LEONARD, TX, 75452-0312

Operator Information

Billing Contact:

Title:

As of 04/24/2006 -

The next unassigned sequence number for WASTES is 0004.

The next unassigned sequence number for UNITS is 004.

80951 F J DOYLE

**** WASTE INFORMATION ****

| Texas Waste Code | Waste Class | Status | Waste Status Code Change Date | Mixed Radioactive | TCEQ Audit Complete | Waste Update Date | Inactive Reason |
|---|---|---|---|---|---|---|---|
| ****** Active Wastes ****** | | | | | | | |
| 00012061 | 1 | Active | | N | No | 9/8/11 | |

Waste Description: Used oil from non-PCB Transformers being scrapped out for salvage; initial generation: 1/86
Date of Generation: 7/27/93

Texas Form Code: 206 - Waste oil

EPA Hazardous Waste Numbers: None
Current Management Units: 22 - Miscellaneous Storage Containers: 001, OFF-SITE
Origin Codes: 3 - Derived from on-site management of a nonhazardous waste
NAICS Code:
New Chemical Substance: N

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 00023041 | 1 | Active | | N | No | 9/8/11 | |

Waste Description: Ash residue from furnace used to remove varnish from copper wire; initial generation: 1/86
Date of Generation: 7/27/93

Texas Form Code: 304 - Other 'dry' ash, slag or thermal residue

EPA Hazardous Waste Numbers: None
Current Management Units: 08 - Thermal Processing Unit, other than Incinerator: 002, OFF-SITE
Origin Codes: 3 - Derived from on-site management of a nonhazardous waste
NAICS Code:
New Chemical Substance: N

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 00039012 | 2 | Active | | N | No | 9/8/11 | |

*** Texas Commission on Environmental Quality ***
Notice of Registration
Industrial and Hazardous Waste

80951 F J DOYLE

| Texas Waste Code | Waste Class | Status | Waste Status Code Change Date | Mixed Radioactive | TCEQ Audit Complete | Waste Update Date | Inactive Reason |
|---|---|---|---|---|---|---|---|
| ****** Active Wastes ****** | | | | | | | |

Waste Description: General plant refuse from office and shop
Date of Generation: 7/27/93
Texas Form Code: 901 - Plant production refuse

EPA Hazardous Waste Numbers: None
Current Management Units: 22 - Miscellaneous Storage Containers: 003, OFF-SITE
Origin Codes: 1 - Generated on-site from a product process or service activity
NAICS Code:
New Chemical Substance: N

| Texas Waste Code | Waste Class | Status | Waste Status Code Change Date | Mixed Radioactive | TCEQ Audit Complete | Waste Update Date | Inactive Reason |
|---|---|---|---|---|---|---|---|
| ** No Longer Generated Wastes ** | | | | | | | |

80951 F J DOYLE

**** UNITS AT THIS SITE MANAGING WASTE ****

| WMU Sequence Number | Unit Capacity | Capacity UOM | Unit Status | Date of Unit Regis | Class of Waste from Offsite | UIC Permit Number | Unit Number on Permit | Unit Update Date | Deed Record Date |
|---|---|---|---|---|---|---|---|---|---|
| ** 'Active', 'Closure Pending' & 'Closure Request' Units ** | | | | | | | | | |
| 001 | | | CLOSURE REQUEST | 4/24/06 | | | | 9/14/11 | |

Unit Type: Miscellaneous Storage Containers
Unit Regulatory Status: 05 Non-Hazardous Regulated
Unit Description: Various storage containers 1 x375 gallon, 2 x 500 gallon and 55 gallon drums. Stored on concrete pad
Billing Class:
System Type Cd: 141 Storage

Wastes Currently Managed in Unit: 00012061 Used oil from non-PC
Wastes Previously Managed in Unit: None

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 002 | | | CLOSURE REQUEST | 4/24/06 | | | | 9/14/11 | |

Unit Type: Thermal Processing Unit, other than Incinerator
Unit Regulatory Status: 05 Non-Hazardous Regulated
Unit Description: High temperature oven to burn varnish off copper
Billing Class:
System Type Cd: 010 Metals recovery including retorting, smelting, chemical, etc.

Wastes Currently Managed in Unit: 00023041 Ash residue from fur
Wastes Previously Managed in Unit: None

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 003 | | | CLOSURE REQUEST | 4/24/06 | | | | 9/14/1 | |

951 F J DOYLE

| MU quence mber | Unit Capacity | Capacity UOM | Unit Status | Date of Unit Regis | Class of Waste from Offsite | UIC Permit Number | Unit Number on Permit | Unit Update Date | Deed Record Date |
|---|---|---|---|---|---|---|---|---|---|

'Active', 'Closure Pending' & 'Closure Request' Units **

Unit Type: Miscellaneous Storage Containers

nit Regulatory Status: 05 Non-Hazardous Regulated

Unit Description: Dumpster, 4 yd for accumulation of plant trash

Billing Class:

System Type Cd: 141 Storage

astes Currently Managed in Unit: 00039012 General plant refuse

astes Previously Managed in Unit: None

| MU quence mber | Unit Capacity | Capacity UOM | Unit Status | Date of Unit Regis | Class of Waste from Offsite | UIC Permit Number | Unit Number on Permit | Unit Update Date | Deed Record Date |
|---|---|---|---|---|---|---|---|---|---|

'Inactive', 'Closed', 'Post Closure Care', 'Never Built' & 'Not Required' Units **

| U uence nber | Unit Capacity | Capacity UOM | Unit Status | Date of Unit Regis | Class of Waste from Offsite | UIC Permit Number | Unit Number on Permit | Unit Update Date | Deed Record Date |
|---|---|---|---|---|---|---|---|---|---|

Not Yet Built' & 'Under Construction' Units **

Enclosure 2

Health Consultation, Doyle Transformer Site, Leonard, Texas, Fannin County (June 29, 2000)

# BACKGROUND AND STATEMENT OF ISSUES

The Texas Natural Resource Conservation Commission (TNRCC) requested that the Texas Department of Health (TDH) evaluate the potential health risks associated with exposure to polychlorinated biphenyls (PCBs) in soil on and near the Frank J. Doyle Transformer site in Leonard, Fannin County, Texas. The site consists of approximately one-half acre surrounded by a six-foot wooden fence and is an active registered salvage yard that receives and processes used power transmission transformers for recoverable metals [1]. Polychlorinated biphenyls were widely used as coolants in transformers before they were banned in 1977 [2]. There is conflicting information as to whether transformers still are being processed on the site.

The site is bordered to the north by a residential area, to the east by Leonard High School, to the south by an alleyway and a residence, and to the west by the owner's residence. The alleyway is used infrequently and is covered by a layer of gravel. A day care center, which contains has outside play areas for children, is located southwest of the site across the alley.

As a result of residential concerns regarding exposures to PCBs in 1995 and in 1998, the Environmental Protection Agency (EPA) and TNRCC collected soil samples on and around the facility. Samples were collected on the site, in the Doyle residential yard adjacent to the site, in the alleyway, in the residential yard south of the site, in drainage ditches downgradient of the site, in the day care center yard, and in the high school yard (Table 1, Figure 1).

Surface-soil samples (0-6") from the residential yard south of the site and from the owner's residential yard contained maximum PCB concentrations of 27.9 milligrams-PCB/kilogram-soil (mg/kg) and 85 mg/kg, respectively. The maximum concentrations of PCBs in surface-soil samples from all other locations off-site ranged from non-detectable to 5.7 mg/kg. Three on-site surface soil samples contained 2.0 to 10.4 mg PCB/kg soil. Sub-surface soil samples (6-24") revealed elevated levels of PCBs on the site (maximum 2,300 mg/kg), in the alleyway (maximum 4,100 mg/kg), and in the drainage ditches downgradient from the site (maximum 37.7 mg/kg) (Figure 1).

In addition to soil samples, three groundwater samples (and one duplicate) were collected from two city of Leonard municipal water wells and one privately owned drinking water well. Samples were analyzed for pesticides, polychlorinated biphenyls (PCBs), semi-volatile and volatile organic compounds, and metals. None of the groundwater samples contained significant quantities of pesticides, PCBs, semi-volatile and volatile organic chemicals or metals.

# DISCUSSION

## Health Assessment Comparison Values

In order to assess the potential health risks associated with soil exposure to a specific PCB, Aroclor 1260, we compared the reported concentrations to health assessment comparison (HAC) values for non-carcinogenic and carcinogenic endpoints (see toxicological evaluation section below). Currently, there are no HAC values specifically for Aroclor 1260 [3]; therefore, we based the non-cancer comparison value for Aroclor 1260 on the Agency for Toxic Substances and Disease Registry's (ATSDR's) minimal risk level (MRL) for the structurally similar compound Aroclor 1254. The MRL is an estimate of a daily human exposure to a contaminant that is unlikely to cause adverse non-cancer health effects over a lifetime. We based the cancer risk comparison value for Aroclor 1260 on the U.S. Environmental Protection Agency's (EPA's) cancer slope factor for PCBs as a class of chemicals and an estimated excess lifetime cancer risk of one-in-one million for persons exposed for 30 years.

Based on average soil ingestion rates of 100 mg/day for 70 kg adults and 200 mg/day for 15 kg children, HAC values for adults and children (14 mg/kg and 1.5 mg/kg) were exceeded in surface soil samples from both residences (Table 1). While exceeding a HAC value does not imply that the contaminant represents a public health threat, it does suggest that site-specific exposure evaluation of the contaminant warrants further consideration.

## Polychlorinated Biphenyls (PCBs)

### Background

PCBs are a group of synthetic organic chemicals that contain 209 individual chlorinated biphenyl compounds (known as congeners) with varying harmful effects. They are either oily liquids or solids and are colorless, odorless, and tasteless. There were seven common types of commercially available PCB mixtures, also known as "Aroclors," which constitute 98% of PCBs sold in the United States since 1970. The name Aroclor 1254 means that the molecule contains 12 carbon atoms (first two digits) and approximately 54% chlorine by weight (second two digits). The more highly chlorinated Aroclors have been found to have greater potential for adverse health effects in humans and animals. There are no known natural sources of PCBs in the environment. Typical concentrations in soil are less than 0.01 to 0.04 mg/kg [3].

Because they don't burn easily and are good insulating materials, PCBs have been used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacture of PCBs stopped in the United States in 1977 because of evidence that they build up in the environment and cause harmful health effects. Today, PCBs can be released into the environment from poorly maintained hazardous waste sites that process used electrical transformers or by burning of organic wastes in municipal and industrial incinerators.

### Environmental Fate

PCBs released into the environment bind strongly to soil and sediments and may remain there for several years to many decades. Because of the strong adherence to soil, migration of the highly

Other effects observed in animals include increased hepatic microsomal enzyme induction, liver enlargement, fat deposition, fibrosis, and necrosis, increased cholesterol (animals), thyroid enlargement with decreased production of thyroid hormones, increased adrenal gland production reported as an adaptive response to stress, facial edema, acne, fingernail loss, loss of hair in monkeys, weight loss, and kidney damage. However, the levels necessary to produce those effects were very high and it is not known if the same effects would happen in people chronically exposed to lower levels [3].

Inhalation of PCBs by workers employed in capacitor facilities has been observed to cause upper respiratory tract or eye irritation, cough, headaches, and tightness of the chest. Hepatic effects, such as increased levels of serum liver-related enzymes may be related to inhalation of PCB particles [4].

Weak correlations between PCB exposure and depressed immunological function, specifically a reduction in natural killer (NK) cells, have been found in humans consuming PCB-contaminated fish; however, these studies are confounded by the coinciding presence of DDT, which also has been associated with affecting the immune system.

The Agency for Toxic Substances and Disease Registry (ATSDR) has established a chronic oral minimal risk level (MRL) of 0.00002 mg/kg/day for Aroclor 1254 based on a study in which a decrease in functioning of the immune system was observed in rhesus monkeys fed with the compound in a mixture of corn oil for a period of 55 months. The MRL is an estimate of daily human exposure to a contaminant that is unlikely to cause adverse health effects over a lifetime. At 55 months, there was a significant dose-related decrease in immunoglobulin titers in response to challenges with sheep red blood cell antigens. The lowest dose level tested, 0.005 mg/kg/day, was considered the lowest observable adverse effects level (LOAEL) for decreased antibody response. Uncertainty factors used in the MRL derivation include 10 for use of a LOAEL, 3 for extrapolation from animals to humans, and 10 for human variability. Studies in species other than monkeys have given inconclusive immunologic findings in that changes in some immune parameters were sporadic, generally not dose-related, or occurred at much higher levels [3].

Cancer Effects

Studies in animals show that PCBs containing 60% chlorine by weight are clearly carcinogenic and indicate differences in the carcinogenic potential of other PCB mixtures, based on the degree of chlorination. Available data suggest that the carcinogenic potency decreases with the percent chlorination. Hepatocellular (liver) carcinomas developed in rats fed an estimated dose of 5 mg/kg/day Aroclor 1260 for 21 months [3].

Animals treated intermediately or chronically with Aroclors 1254 or 1260 showed statistically increased incidences of liver adenomas and carcinomas. To investigate hepatic tumor progression after exposure has stopped, groups of rats were exposed for 52 weeks, then exposure was discontinued for an additional 52 weeks. For Aroclor 1260, the "stop-study" tumor incidences were greater than those of the lifetime study, indicating persistent biological activity after exposure stops for the more highly chlorinated Aroclors. Other cancers observed in animals include thyroid gland carcinomas, adenocarcinoma of the stomach, leukemia and lymphoma [3].

Table 2. Exposure dose matrix for different potential exposure scenarios. Exposure based on ingestion of PCB contaminated soil at each of the two residences where PCB levels exceeded HAC values. Exposure expressed in mg/kg/day.[1]

| | | average daily soil ingestion rate | | | | |
|---|---|---|---|---|---|---|
| weight (kg) | age (years) | 25 mg | 50 mg | 100 mg | 150 mg | 200 mg |
| **Soil concentration = 28 mg/kg Aroclor 1260 (0-6") from the residence immediately south of the site** | | | | | | |
| 15 | 3-6 | 4.6x10-5 | 9.2x10-5 | 1.9x10-4 | 2.8x10-4 | 3.7x10-4 |
| 35 | 10-11 | 2x10-5 | 4x10-5 | 8x10-5 | 1.2x10-4 | 1.6x10-4 |
| 70 | adult | 1x10-5 | 2x10-5 | 4x10-5 | 6x10-5 | 8x10-5 |
| **Soil concentration = 85 mg/kg Aroclor 1260 (0-6") from the Doyle residence** | | | | | | |
| 15 | 3-6 | 1.4x10-4 | 2.8x10-4 | 5.7x10-4 | 8.5x10-4 | 1.1x10-3 |
| 35 | 10-11 | 6.1x10-5 | 1.2x10-4 | 2.4x10-4 | 3.6x10-4 | 4.8x10-4 |
| 70 | adult | 3.0x10-5 | 6.1x10-5 | 1.2x10-4 | 1.8x10-4 | 2.4x10-4 |

[1] Shaded Areas represent scenarios where ATSDR's MRL was exceeded.

## CHILD HEALTH INITIATIVE

ATSDR's Child Health Initiative recognizes that the unique vulnerabilities of infants and children demand special emphasis in communities faced with contamination of their water, soil, air, or food. Children are at greater risk than adults from certain kinds of exposures to hazardous substances emitted from waste sites and emergency events. They are more likely to be exposed because they play outdoors and they often bring food into contaminated areas. They are shorter than adults, which means they breathe dust, soil, and heavy vapors close to the ground. Children also are smaller, resulting in higher doses of chemical exposure per body weight. The developing body systems of children can sustain permanent damage if toxic exposures occur during critical growth stages. Most importantly, children depend completely on adults for risk identification and management decisions, housing decisions, and access to medical care.

We evaluated the potential for children living in the vicinity of the Doyle Transformer site to be exposed to polychlorinated biphenyls at levels of health concern. Currently children are not likely to be chronically exposed to contaminants at this site; however, infrequent contact is possible. Children living at the residence south of the site and at the owner's property could be exposed to PCBs at levels of health concern.

# REFERENCES


1. Texas Natural Resource Conservation Commission, 1998. Screening Site Inspection Report for Doyle Transformer Site, Leonard, Fannin County, Texas. Prepared in cooperation with the U.S. Environmental Protection Agency. May 1998.

2. U.S. Environmental Protection Agency, Integrated Risk Information System, Adobe Acrobat Portable Format Files, 1999.

3. Agency for Toxic Substances and Disease Registry. Toxicological profile for polychorinated biphenyls, Atlanta: ATSDR, Sept. 1997.

4. Brown, D.P. Mortality of workers exposed to polychorinated biphenyls, an update. Arch. Environmental Health. 42 (6): 333-339.

5. Bertazzi, P.A., et.al., Cancer mortality of capacitor manufacturing workers. Am. J. Ind. Med. 11(2): 165-176.

MDS

# REGISTRATION AND REPORTING
## Action Request Form

T/F/IHW 80951
WWC COMM# 12000388
PROJ. MGR. jsirota

CO
RP

| | |
|---|---|
| TO: | ~~Chris Siegel~~ ccpsi<br>Corrective Action Section/ MC 127<br>Remediation Division |
| FROM: | CAROL GENSWEIDER, Staff<br>Industrial and Hazardous Waste Registration Team<br>Registration and Reporting Section<br>Registration, Review and Reporting Division<br>Mail Code 129<br>Telephone 239- 6861 |
| DATE: | 4-27-06 |
| RE: | Request to Close a Waste Management Unit (WMU) and/or Notice of Registration<br>SWR # 80951 |

The Registration and Reporting Section has received the attached correspondence requesting to close a WMU or a facility. All non-closure updates have been addressed.

**List of WMU(s) for Closure or R&R Staff Comments:**

3 waste management units need closure.

Thanks
Carol G.

Received
MAY 02 2006
Remediation
Corrective Action

MA

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Received
MAY 02 2006
Permitting [illegible]
Commission [illegible]

[illegible]

[illegible]

ett White, *Chairman*
ph" Marquez, *Commissioner*
K. Soward, *Commissioner*
enn Shankle, *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

# REMINDER

F J Doyle
F J Doyle Salvage Transformers
PO Box 312
Leonard, TX 75452

April 17, 2006

Re: Solid Waste Registration No. 80951
305 E Cottonwood
Leonard, TX 75452

Dear F J Doyle:

The Texas Commission on Environmental Quality (TCEQ) is the designated agency to track industrial, hazardous and solid waste generation, treatment, storage and/or disposal in the State of Texas. A recent records review of the self-reporting system indicates that we have not received the 2005 Annual Waste Summary report concerning the disposition of solid waste for the above registration.

If you have previously submitted the report, please send us a copy for our records. If you have not submitted the report, please do so using the enclosed Annual Waste Summary form or transmit using your local STEERS program. Please send this report to the Permitting & Remediation Support Division, Registration and Reporting Section, IHW Registration Team, MC-129, Post Office Box 13087, Austin, Texas 78711-3087. We should receive the report by May 8, 2006.

The reporting requirements are contained in the industrial solid waste and municipal hazardous waste management regulations of the Texas Commission on Environmental Quality (30 Texas Administrative Code, Chapter 335.9). Failure to submit the proper report is considered a violation of this regulation and the Solid Waste Disposal Act.

Thank you for your attention to this matter. Should you have any questions, please contact the IHW Registration Team at (512) 239-6413.

Sincerely,

IHW Registration Team
Registration and Reporting Section
Permitting & Remediation Support Division

Received
MAY 02 2006
Remedi
Corr

Enclosures

cc: Region Office 04

Enclosure 2

Copy of October 2015 *APAR* and October 2015 *Closure Report*

IHWREG 80951
CO./DATE: 5/27/15
DOC. NAME: UNIT CLOSURE NOTICE
IDA COMM#: 19842957
PROJ. MGR: E. WEHNER

Original to CR ✓

COPY

7.9. Doyle Salvage Transformers

905 N. Popular St.

Leonard, TX 75452

SWR 80951

Waste Program Management

TCEQ Region 4 Office

Fort Worth, Texas

RECEIVED
OCT 12 '15 OCT 12 '15
TCEQ MAIL CENTER VCP-CA SECTION

Danny Doyle

(b) (6) [redacted]

Leonard, TX 75452

May 27, 2015

Texas Commission on Environmental Quality

P.O. Box 13087

Austin, TX 78711-3087

Re: Request for Closure

SWR 80951

7.9. Doyle Salvage Transformers

905 N. Popular St.

Leonard, TX 75452

I would like to request the closure of the following sites as requested with TCEQ:

1. 00012061 – Used oil from Non-PCB Transformer scrapped out for salvage
2. 00023041 – Furnace
3. 00039012 – Dumpster for plant refuse from office and shop

The Following is a visual report of the site and all information I am able to provide since the transformer salvage was run by my dad, Frank Doyle, who is now deceased. Any and all records have been discarded because no one was aware that it would be needed at further dates.

The only thing left on the site is one 300 gallon Non-PCB container and 3-4 Non-PCB 55 gallon barrels which are in the process of being removed since this is a requirement for closure.

The last time any salvage work was done was in August of 1999. The transformers that were received had all oil removed by the electric company prior to their delivery to the location. The only names of companies that I can recall delivering transformers to the site are:

1. Louisiana Power & Light
2. Yazoo Valley in Mississippi.
3. S.W. Power Company in Longview, Texas

Danny Doyle

(b) (6) [redacted]

Leonard, TX 75452

May 27, 2015

I also remember that no transformers could be sent or delivered by these companies that were more than 50 PPM. If there was any small amount of oil that had been left inside, which was a very small amount, it would be picked up by a company out of Oklahoma I believe called Wagner. I think Waste Management was the company that provided and picked up the dumpster from the property.

As for the furnace, it was in the building when Don Sadler took over use of the building about five years ago. He cleaned out the building and it was sold for scrap. I enclosed pictures of the location of the unit to be reviewed.

Item 1: Where the excess oil was kept, as you can see, was inside a concrete contained area and barrels there were clearly marked Non-PCB. The container as you can see is still in good condition.

Item 2: The furnace was inside the building and enclosed are 2 typical photos of the floors, which is still in good condition. This confirms there was no leakage through the floor into the grounds underneath.

Item 3: The location of where the waste dumpster sat was a concrete slab that is still in good condition. The dumpster in the photo was not there when the salvage operation was in service.

I would ask you to refer to the soil samples taken by TCEQ & EPA in 1995 and again in 1998. In your report it states that this site was not considered to be a health hazard. TCEQ and EPA also tested the ground water at 3 locations and found there was no significant quantity of PCB or other chemical contaminants at these locations. The report also states that PCB attaches itself to organic matter in the soil and moves very slowly, if it moves at all.

TCEQ and EPA is fully aware of the intended use of this property location. It will be a parking lot completely covered in concrete with a 24" beam around the perimeter. This would be a low occupancy location. With the low levels of PCB and the intent of use of the property it would be an excellent way to eliminate this location and take it off the books of TCEQ. Through conversation and meetings with the EPA it would fall under the light occupancy use for this property.

Thank you,

Danny Doyle

Danny Doyle

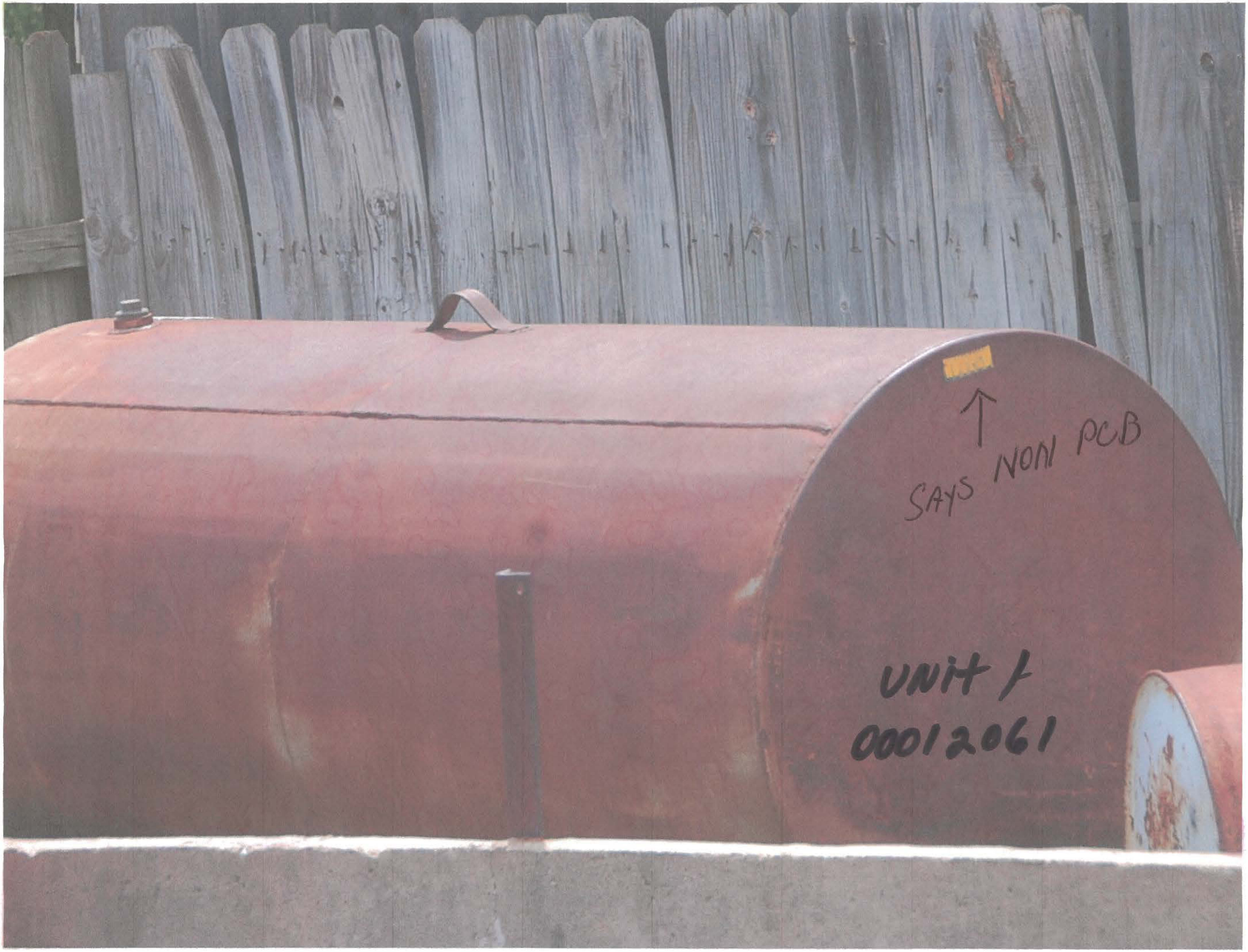
NOTE: Please CC any questions and your answer to:
(b) (6) [redacted] Leonard, TX 75452

Google earth

feet 200

meters 90

unit 1
00012061


SAYS NON PCB
UNIT 1
00012061

unit 2
00023041

COUNTY TRASH
UNIT 3
00039012

# Cover Page

Program ID No. (primary): SWR 80951 Report date: August 2015
TCEQ Region No.: 4 MSD Certificate No.:
Additional Program ID Numbers.: SWR/Facility ID No.: PST Facility ID No.:
DCRP ID No.: VCP ID No.: LPST ID No.:
MSW Tracking No.: HW Permit/CP No.: Enforcement ID No.:
Other ID Nos.: EPA CERCLIS TXD980865109

Reason for submittal (check all that apply):
☒ Initial submittal
☐ Revision

Notice of Deficiency Letter
Permit/Compliance Plan
Voluntary response

Enforcement/Agreed order
Directive/NOV letter
Other:

## On-Site Property Information

On-Site Property (Facility) Name: Former F.J. Doyle Transformer Salvage/Recycling Facility
Street no. 905 Pre dir: N. Street name: Poplar Street type: St Post dir:
City: Leonard County: Fannin County Code Zip 75452
Nearest street intersection and location description: 0.344 acres, SW Corner of N. Poplar St and E. Cottonwood St

Latitude: Decimal Degrees (indicate one) North 33.389437
Longitude: Decimal Degrees (indicate one) West 96.243147

## Contact Person for On-Site Property Information and Acknowledgment

Company Name or Person: Heirs: Mr. Garry Doyle, Mr. Danny Doyle, Ms. Lynda Kaylor
Contact Name: Mr. Garry Doyle Title: Owner
Mailing Address: (b) (6) [redacted]
City: Leonard State: TX Zip: 75452 Phone:
Email: Fax:
Person is: ✓ property owner ___ property manager ___ potential purchaser ___ tenant ___ operator
other

By my signature below, I acknowledge the requirement of §350.2(a) that no person shall submit information to the executive director or to parties who are required to be provided information under this chapter which they know or reasonably should have known to be false or intentionally misleading, or fail to submit available information which is critical to the understanding of the matter at hand or to the basis of critical decisions which reasonably would have been influenced by that information. Violation of this rule may subject a person to the imposition of administrative, civil, or criminal penalties.

Signature of Person Danny Doyle Name (print): Danny Doyle Date: 9-13-15

## Consultant Contact Person

Consultant Company Name: Terra-Solve, Inc.
Contact Person: Rick Robertson Title: VP
Mailing Address: PO Box 702522
City: Dallas State: TX Zip: 75370
Phone: 972-267-1900 Fax: E-mail address rick@terra-solve.com

# Professional Signatures and Seals

## Professional Geoscientist

| | | |
|---|---|---|
| Charles R. Robertson | 150 | 07/31/2016 |
| Professional Geoscientist | Geoscientist License number | Expiration date |
| Signature | 8/31/15<br>Date | |
| 972-267-1900 | | rick@terra-solve.com |
| Telephone number | FAX number | E-mail |

## Professional Engineer

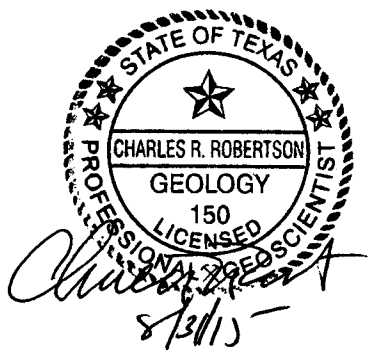
| | | |
|---|---|---|
| Professional Engineer | P.E. License number | Expiration date |
| Signature | Date | |
| **Telephone number** | FAX number | E-mail |

## Registered Corrective Action Specialists (RCASs) and Corrective Action Project Managers (CAPMs)

For LPST sites only.

| | | |
|---|---|---|
| Registered Corrective Action Specialist | RCAS Registration number | Expiration date |
| Signature | Date | |
| Corrective Action Project Manager | CAPM Registration number | Expiration date |
| Signature | Date | |
| Telephone number | FAX number | E-mail |

**Seals, as applicable:**



| APAR Table of Contents[1] | Check if included |
|---|---|
| Cover Page | X |
| Professional Signatures and Seals | X |
| Executive Summary | X |
| Conclusions and Recommendations | X |
| Chronology* | X |
| Specialized Submittals Checklist | |
| **Section 1 Property Information** | |
| Discussion of site operations, release sources, and geology/hydrogeology | X |
| Table 1A - Sources of Release | X |
| Table 1B - Potential Off-Site Sources | X |
| Figure 1A - On-Site Property Map* | X |
| Figure 1B - Affected Property Map* | X |
| Figure 1C - Regional Geologic Map* | X |
| Figure 1D - Regional Geologic Cross Section(s)* | X |
| **Section 2 Exposure Pathways and Groundwater Resource Classification** | |
| Discussion of potential receptors, groundwater classification, and exposure pathways | X |
| Table 2A - Water Well Summary | X |
| Table 2B - Affected Water Well Summary | X |
| Table 2C - Complete or Reasonably Anticipated to be Complete Exposure Pathways | X |
| Figure 2A - Potential Receptors Map* | X |
| Figure 2B - Field Survey Photographs* | X |
| Figure 2C - Water Well Map* | X |
| Attachment 2A - Tier 1 Ecological Exclusion Criteria Checklist | |
| Attachment 2B - Tier 1 Ecological Exclusion Criteria Supporting Documentation* | |
| **Section 3 Assessment Strategy** | |
| Discussion of assessment strategies | X |
| Table 3A. Underground Utilities | X |
| **Section 4 Soil Assessment** | |
| Discussion of nature and extent of COCs in soil | X |
| Table 4A - Surface Soil Residential Assessment Levels with no Ecological Component | X |
| Table 4B - Surface Soil Residential Assessment Levels with Ecological Component | |
| Table 4C - Subsurface Soil Residential Assessment Levels | |
| Table 4D - Soil Data Summary* | X |
| Table 4E - Soil Geochemical/Geotechnical Data Summary* | |
| Figure 4A - Surface Soil COC Concentration Maps* | X |
| Figure 4B - Subsurface Soil COC Concentration Maps* | |
| Figure 4C - Cross Sections* | |
| **Section 5 Groundwater Assessment** | |
| Discussion of nature and extent of COCs in groundwater | |
| Table 5A - Groundwater Residential Assessment Levels | |
| Table 5B - Groundwater Data Summary* | |
| Table 5C - Groundwater Geochemical Data Summary* | |
| Table 5D - Groundwater Measurements* | |
| Figure 5A - Groundwater Gradient Map* | |
| Figure 5B - Groundwater COC Concentration Maps* | |
| Figure 5C - Groundwater Geochemistry Maps* | |
| Figure 5D - Cross Section Groundwater-to-Surface Water Pathway* | |
| **Section 6 Surface Water Assessment and Critical PCL Development** | |
| Discussion of nature and extent of COCs in surface water | |
| Table 6A - Surface Water Critical PCLs | |
| Table 6B - Surface Water Data Summary* | |
| Figure 6A - Surface Water PCLE Zone Map* | |
| Figure 6B - Photographs* | |

[1] Items marked with an asterisk do not have prescribed formats (for example, laboratory reports).

| | Check if included |
|---|---|
| **Section 7 Sediment Assessment and Critical PCL Development** | |
| Discussion of nature and extent of COCs in sediment | |
| Table 7A - Sediment Critical PCLs | |
| Table 7B - Sediment Data Summary* | |
| Figure 7A - Sediment PCLE Zone Map* | |
| **Section 8 Air Assessment and Critical PCL Development** | |
| Discussion of the nature and extent of COCs in outdoor air | |
| Table 8A - Outdoor Air Data Summary* | |
| Figure 8A - Outdoor Air COC Concentration Maps* | |
| **Section 9 Ecological Risk Assessment** | |
| Discussion of ecological risk assessment, expedited stream evaluation, and/or reasoned justification. Copies of SLERA or SSERA. | |
| **Section 10 COC Screening** | |
| Discussion of COC screening process and results | |
| Table 10A - COC Screening Summary Table | |
| **Section 11 Soil Critical PCL Development** | |
| Discussion of soil critical PCL evaluation | |
| Table 11A - Surface Soil Critical PCLs (On-Site/Off-Site) | |
| Table 11B - Subsurface Soil Critical PCLs (On-Site/Off-Site) | |
| Figure 11A - Surface Soil PCLE Zone Maps* | |
| Figure 11B - Subsurface Soil PCLE Zone Maps* | |
| Figure 11C – Cross Sections of the PCLE Zone* | |
| **Section 12 Groundwater Critical PCL Development** | |
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| Table 12A - Groundwater Critical PCLs - Full Plume POE* | |
| Table 12B - Groundwater-to-Surface Water PCLs | |
| Table 12C - Groundwater-to-Sediment PCLs | |
| Table 12D - Groundwater Critical PCL Evaluation - Surface Water/Sediment Discharge POE | |
| Figure 12A - Groundwater PCLE Zone Map* | |
| **Section 13 Notifications** | |
| Discussion of notifications conducted | |
| Table 13A - Notification Summary | |
| Figure 13A - Notification Map* | |
| **Appendices** | |
| Appendix 1 Notifications* | |
| Appendix 2 Boring Logs and Monitor Well Completion Details* | |
| Appendix 3 Monitor Well Development and Purging Data* | |
| Appendix 4 Registration and Institutional Controls* | |
| Appendix 5 Water Well Records* | X |
| Appendix 6 Monitor Well Records* | |
| Appendix 7 Aquifer Testing Data* | |
| Appendix 8 Statistics Data Tables and Calculations* | |
| Appendix 9 Development of Non-Default RBELs and PCLs* | |
| Appendix 10 Laboratory Data Packages and Data Usability Summary* | |
| Appendix 11 Miscellaneous Assessment* | X |
| Appendix 12 Waste Characterization and Disposition Documentation* | |
| Appendix 13 Photographic Documentation* | |
| Appendix 14 Standard Operating Procedures* | |
| Appendix 15 OSHA Health and Safety Plan (§350.74(b)(1))* | |
| Appendix 16 Reference List* | X |

# Executive Summary

| Environmental Media | Actual or Probable Exposures On-Site? | | Actual or Probable Exposures Off-Site? | | Have notifications for actual or probable exposures been completed? (§350.55(e)) | | |
|---|---|---|---|---|---|---|---|
| | Yes | No | Yes | No | Yes | No | N/A |
| Soil | X | | X | | | X | |
| Groundwater | X | | X | | | X | |
| Sediment | X | | X | | | X | |
| Surface Water | | X | | X | | X | |

Is there, or has there been, an affected or potentially affected water well? ✓ Yes ____ No

If yes, what is the well used for? Publice Supply Well, 370 feet to the SW

Actual land use: On-site: ___ Res ✓ C/I Off-site affected property: ✓ Res ____ C/I __ N/A

Land use for critical PCL determination: On-site: ✓ Res ___ C/I Off-site affected property: ___ Res ___ C/I __ N/A

Did the affected property pass the Tier 1 ecological exclusion criteria checklist? _____ Yes _____ No

**Affected groundwater-bearing unit(s) (in order from depth below ground surface), or uppermost groundwater-bearing unit if none affected**

| Unit No. | Name | Depth below ground surface (ft) | Resource Classification (1, 2, or 3) |
|---|---|---|---|
| 1 | Shallow | Not assessd | Unknown |
| 2 | Woodbine Formation | 1,690 | 1 |
| 3 | | | |

**Assessment**

| Environmental Media | | Assessment Levels Exceeded? | | | | | | Affected property defined to RAL? | | | Is COC extent stable or expanding? | General classes of COCs (VOCs SVOCs, metals, etc.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | On-Site? | | | Off-Site? | | | | | | | |
| | | Yes | No | Not sampled | Yes | No | Not sampled | Yes | No | N/A | | |
| Soil | Surface | X | | | X | | | | X | | Unknown | PCB, Mtls |
| | Subsurface | X | | | X | | | | X | | Unknown | PCB, Mtls |
| Groundwater | | | | X | | | X | | X | | Unknown | PCB, Mtls |
| Sediment | | | | X | | | X | | X | | Unknown | PCB, Mtls |
| Surface Water | | | | X | | | X | | X | | Unknown | PCB, Mtls |

**NAPL Occurrence Matrix (Unknown, last sampled 1990s)**

| | NAPL Occurrence | | Description |
|---|---|---|---|
| NAPL in vadose zone | | No NAPL in vadose zone | There is no direct or indirect evidence of NAPL in the vadose zone |
| | | NAPL in/on soil | NAPL detected in or on unsaturated, unconsolidated clay-, silt-, sand-, and/or gravel-dominated soils |
| | | NAPL in fractured clay | NAPL detected in fractures of unsaturated fine-grained soils |
| | | NAPL in fractured or porous rock | NAPL detected in unsaturated lithologic material |
| | | NAPL in karst | NAPL detected in karst environment |
| NAPL at capillary fringe | | No NAPL at capillary fringe | There is no direct or indirect evidence of NAPL at the capillary fringe |
| | | NAPL at capillary fringe | NAPL detected at vadose-saturated zone transition, capillary fringe (in contact with water table) |
| NAPL in saturated zone | | No NAPL in saturated zone | There is no direct or indirect evidence of NAPL in the saturated zone |
| | | NAPL in soil | NAPL detected in saturated unconsolidated clay-, silt-, sand-, and/or gravel-dominated soils |
| | | NAPL in fractured clay | NAPL detected in fractures of saturated fine-grained soil or other double-porosity sediments |
| | | NAPL in saturated fractured or porous rock | NAPL detected in saturated lithologic material |
| | | NAPL in saturated karst | NAPL detected in karst environment within the saturated zone |
| NAPL in surface water or sediment | | No NAPL in surface water or sediment | There is no direct or indirect evidence of NAPL in surface water or sediments |
| | | NAPL in surface water | NAPL detected in surface water at exceedance concentration levels or visual observation |
| | | NAPL in sediments | NAPL detected in sediments at exceedance concentration levels or visual observation via migration pathway or a direct release |

**Remedy Decision**

| Environmental Media | | Critical PCL exceeded on-site? | | | Critical PCL exceeded off-site? | | | PCLE zones defined? | | | General class (VOCs, SVOCs, metals, etc.) of COCs requiring remedy |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Yes | No | N/A | Yes | No | N/A | Yes | No | N/A | |
| Soil | Surface | X | | | X | | | | X | | PCB, metals |
| | Subsurface | X | | | X | | | | X | | PCB, Metals |
| Groundwater | | | | | | | | | | | Not sampled |
| Sediment | | X | | | X | | | | | | PCB, metals |
| Surface Water | | | | | | | | | | | Not sampled |

**NAPL Triggers (Unknown, last sampled in 1990s)**

| NAPL Response Action Triggers | | Description of Triggers |
|---|---|---|
| | No NAPL response action triggers | No NAPL triggers have been observed in any assessment zones (vadose, capillary fringe and saturated), nor in surface water or sediments |
| | NAPL vapor accumulation is explosive | NAPL vapors accumulate in buildings, utility and other conduits, other existing structures, or within anticipated construction areas at levels that are potentially explosive (≥ 25% LEL) |
| | NAPL zone expanding | NAPL zone is observed to be expanding using time-series data |
| | Mobile NAPL in vadose zone | NAPL zone is observably mobile, or is theoretically mobile based on COC concentrations and residual saturation |
| | NAPL creating an aesthetic impact or causing nuisance condition | NAPL is responsible for objectionable characteristics (e.g., taste, odor, color, etc.) resulting in making a natural resource or soil unfit for intended use |
| | NAPL in contact with Class 1 groundwater | NAPL has come in actual contact with saturated zone or capillary fringe of a Class 1 GWBU |
| | NAPL in contact with Class 2 or 3 groundwater | NAPL has come in actual contact with saturated zone or capillary fringe of a Class 2 or Class 3 GWBU |
| | NAPL in contact with surface water | Liquid containing COC concentrations that exceed the aqueous solubility in contact with surface water via various migration pathways or direct release to surface water |
| | NAPL in or on sediments | Liquid containing COC concentrations that exceed the aqueous solubility impact surface water sediments via migration pathway or a direct release |

# Conclusions and Recommendations

Use this section to summarize the major activities conducted, results, and conclusions of the assessment and to briefly discuss the recommended response actions.

### Assessment Results

Investigation of the site began in 1990 by both EPA and TCEQ contractors, and soil samples collected indicated elevated levels of PCBs, yet no cleanup has ever been conducted. Please see the attached comprehensive chronology of the case and a figure showing the previous sampling points and their PCB concentrations. No groundwater samples have been collected.

On-site soils exceed the Tier I Residential PCLs for PCBs, copper, and hexachlorobenzene. Off-site residential properties to the west and south contain affected soil above the Tier I Residential PCLs for PCBs, copper, and hexachlorobenzene. Sediment samples from the Right-of-way's also exceed the Tier I PCLs for the above-mentioned constituents. The horizontal and vertical extent of these contituents in the soil has not been determined.

### NAPL Discussion

All previous sample results are included in this report, however documentation of these efforts are incomplete and lost to time. No specific information on the presence or absence of NAPL was available. The proposed additional sampling will address this deficiency. If present, a NAPL management plans and assessment will be developed in accordance with the guidance documents *Risk-Based NAPL Management* (RG-366/TRRP-32) and *NAPL Assessment* (RG-366/TRRP-12A), respectively.

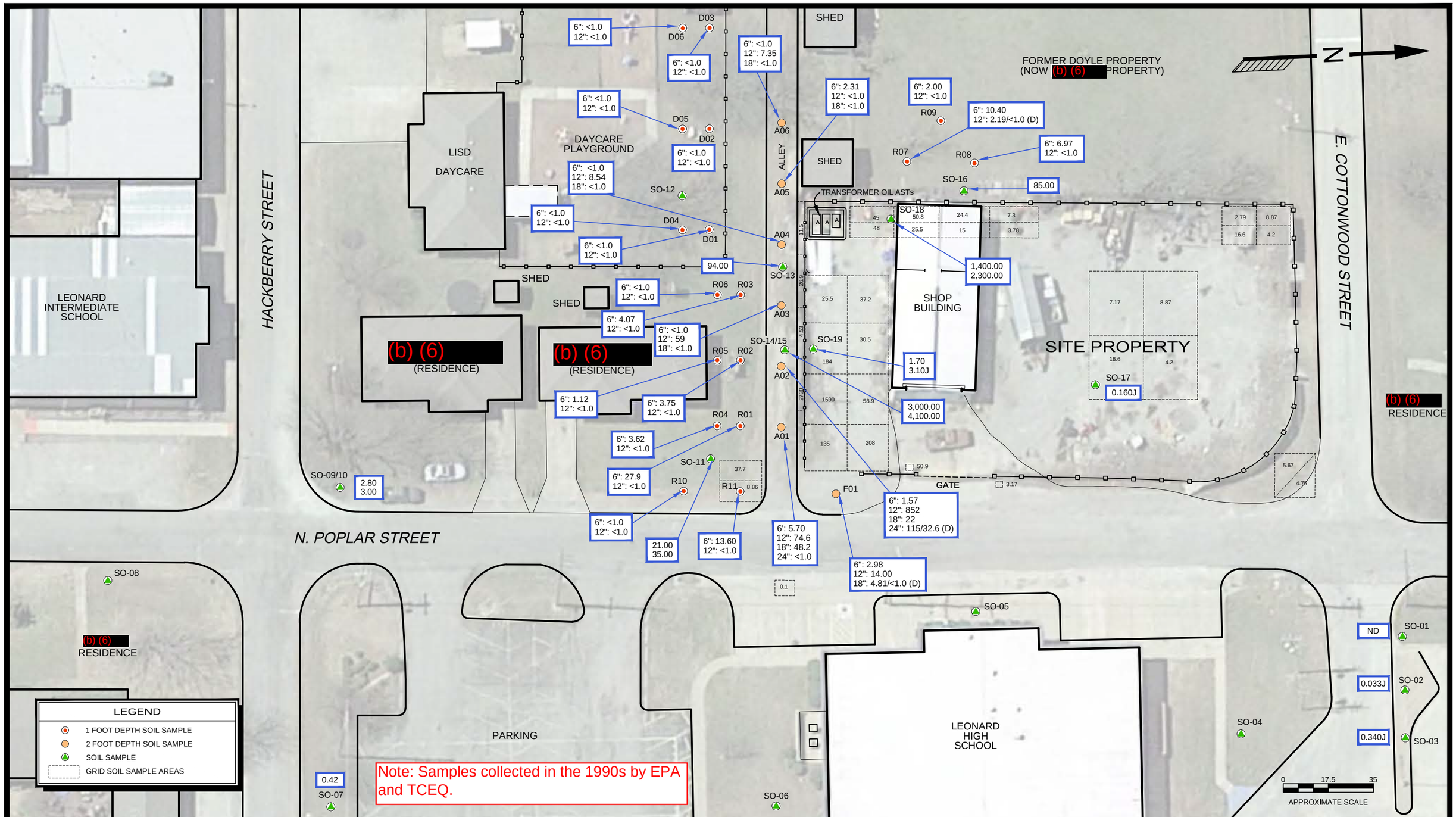
### Response Actions and Recommendations

Remedy Standard B allows the use of physical and institutional controls to be used in combination with or in lieu of removal or decontamination of the COCs to block exposure or to control COCs such that exposure does not occur. After the current site conditions and groundwater pathway has been assessed or eliminated, any remaining off-site soils above the PCLs will be removed. The site will be covered by paving and maintained as an engineering control to prevent exposure to any remaining on-site soils above the PCLs. A deed restriction will be filed to prevent exposure to on-site soils exceeding PCLs.

The former F.J. Doyle Transformer Salvage site is planned to be razed and paved over and used for a parking lot for the Leonard ISD High School. It is anticipated that this engineering control and a Deed Restriction will be the ultimate Remedy Standard for the site. Terra-Solve recommends additional soil and groundwater samples be collected on site to determine the current site conditions. Terra-Solve also recommends that additional off-site soil samples be collected from the upper 15 feet of soil near the former soil sample locations and along the drainage ditches around the site perimeter, and that three monitoring wells be installed near the former source areas. Based on these results, the current conditions can be established and the groundwater exposure pathway can be evaluated, and any further efforts to determine the horizontal extent of COCs above the Tier I Residential PCLs that may be required. Any off-site soils exceeding the Tier I Residential PCLs will be removed.

***Figure A - Affected Property and PCLE Zone Map***

A map illustrating the results of the EPA and TCEQ sampling efforts from the 1990s is attached. As shown on the map, PCBs above the Tier I Residential PCLs are present both on site and off site.





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# PCB CONCENTRATION MAP

FORMER F.J. DOYLE SALVAGE TRANSFORMERS
(b) (6) (905 N. POPLAR STREET)
LEONARD, FANNIN COUNTY, TEXAS

| DATE: | SCALE: |
|---|---|
| JULY 2014 | SEE ABOVE |
| PROJECT NO.: 09724 | FIGURE NO.: A |

# Specialized Submittals Checklist

X **Check here if no specialized submittals in this report**

| | If included, specify section or appendix |
|---|---|
| **Ecological Risk Assessment** | |
| Reasoned justification, expedited stream evaluation, Tier 2 or 3 ecological risk assessment, and/or proposal for ecological services analysis | |
| **Statistics** | |
| Calculated site-specific background concentrations | |
| Used alternate statistical methods to determine proxy values for non-detected results (§350.51(n)) | |
| Calculated representative concentrations (§350.79(2)) for remedy decision | |
| **Analytical Issues** | |
| Used SQL for assessment or critical PCL instead of the MQL (§350.51(d)(1)) or PCL (§350.79) | |
| The MQL of the analytical method exceeds assessment levels/critical PCLs (§350.54(e)(3)) | |
| **Human Health/Toxicology** | |
| Variance to exposure factors approved by TCEQ Executive Director[1] (§350.74(j)(2)) | |
| Developed PCLs based on alternate exposure areas | |
| Evaluated non-standard exposure pathway (e.g., agricultural, contact recreation, etc) | |
| Combined exposure pathways across media for simultaneously exposed populations (§350.71(j)) | |
| Adjusted PCLs due to residual saturation, cumulative risk, hazard index, aesthetic concerns, or theoretical soil vapor | |
| Utilized non-default human health RBELs to calculate PCLs (includes use of non-default parameters, toxicity factors not published in rule, etc.) (§350.51(l), §350.73, §350.74) | |
| Calculated Tier 2 or 3 RBELs/PCLs or TSCA levels for polychlorinated biphenyls, or calculated Tier 2 or 3 RBELS/PCLs for cadmium, lead, dibenzo-p-dioxins, dibenzofurans, and/or polycyclic aromatic hydrocarbons | |
| Calculated Tier 1, 2, or 3 total petroleum hydrocarbon (TPH) PCLs | |
| Developed sediment/surface water human health RBELs and PCLs | |
| **Fate and Transport** | |
| Used or developed groundwater to surface water dilution factors | |
| Calculated Tier 2 PCL | |
| Calculated Tier 3 PCL | |
| **Groundwater Issues** | |
| Conducted aquifer test, classified Class 3 groundwater, or determined non-groundwater bearing unit (saturated soil) | |

[1] Prior approval by Executive Director is required.

# Section 1 Property Information

Use this section to describe the environmental setting, the geology/hydrogeology of the area, general operational history for the property, the affected property, and sources of releases.

## *Section 1.1 Physical Location*

### Property Location and Land Use

The site is the location of the former F.J. Doyle Transformer Salvage and Recycling facility. The property is located at 905 N. Poplar Street and consists of two lots of land. The property (total of 0.344 acre) is bounded by E. Cottonwood Street to the north, N. Poplar Street to the east, a single-family residence to the south, and a vacant lot to the west in the city of Leonard in Fannin County, Texas, 75452. The property is abutted by vacant and single family residential properties. Leonard High School is located to the east across N. Poplar Street. The latitude of the center of the property is approximately 33° 23' 22.05" N and the longitude is approximately 96° 14' 35.31" W. The legal description of the property is included in Appendix 16.

The site is owned by Mr. Danny Doyle, Ms. Linda Kaylor, and Mr. Garry Doyle, heirs of the late Mr. Frank J. Doyle. Site Photographs are provided in Appendix A, a Site Vicinity Map and the Site Plan is included in the attachments (Figures 1A and 1B).

### Topography

Based on Terra-Solve's review of the United States Geological Survey (USGS) 7.5 Minute Topographic Map of the Leonard, Texas Quadrangle (1964) the property is located at an elevation of approximately 735 feet above mean sea level (MSL). The topography of the area is gently rolling to the south toward Arnold Creek. A copy of the topographic map is included in the attachments (Figure 2C).

Terra-Solve reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), for Fannin County, Texas, Unincorporated Area, Panel Number 480807 0010B, November 8, 1977. Although the city limits of Leonard are excluded from this map, the proximity of the site to the northeast corner of the city allows Terra-Solve to infer that the property is likely located in Zone X, considered outside the 500-year flood zone. This designation is not considered to present an environmental concern to the property. A copy of the FEMA map is located in the attachments.

### Weather

In recent years, the area has experienced significant periods of drought, followed by near record rainfalls in 2015. Leaching to lower depth during dry periods and smearing of oil in the subsurface due to fluctuating water table periods is possible. Metals are not particularly mobile vertically (pH dependent), but runoff from contaminated site soils/sediment could impact soil along drainage ditches bordering the site. Average rainfall is approximately 45 inches per year. The effect of these variations and overall lowering on COC transport and distribution depends on the nature of the COC. For LNAPLs, it has the effect of creating a "smear" zone. However, for the COCs at the site (PCBs and metals), drought conditions would not appreciably exacerbate

their effect.

## Section 1.2 Affected Property and Sources of Release

### History and Operations

Transformer were salvaged, oil was drained, and copper was recovered from the salvaged transformers at the site from 1974 to 1999. Initially oil was used as weed killer on site and distributed to others in the community as weed killer. Later recovered oil was stored in aboveground tanks and drums. The land is improved by two buildings, a 2,190 square-foot shop and a 450 square-foot shed. A portable building and a concrete containment sump with three aboveground storage tanks are also present. The site has subsequently been used as a vehicle repair and tire shop.

During site reconnaissance conducted by Terra-Solve in November of 2009, the following items were observed:

- Terra-Solve observed a solvent parts washer in the warehouse repair area. The warehouse and office storeroom also store various amounts of general cleaning and general maintenance supplies.

- Three aboveground storage tanks (ASTs) are present in a secondary containment basin at the southwest corner of the property. All three were reported to previously have been used to store residual transformer oil during the transformer salvage operations. The three tanks still retain a "No PCB" sticker near their fill pipes. The ASTs are located in a concrete secondary containment basin with a valve for draining the containment after rain events after the operator first examines the water to insure that no sheen or floating oil is present. The containment was over half full of rainwater at the time of the site visit, and significant debris and hydrocarbon sheen on the water was observed. The drain was closed, but was not locked.

- A kerosene-dispensing AST was observed on the north side of the shop building. The AST appeared to be empty, but this could not be confirmed.

- Numerous 55-gallon drums of new/used oil and hydraulic fluid are located in and around the shop and numerous used and emptied drums are stored in and around the secondary containment basin.

- Numerous areas of oil staining were observed on the concrete inside the shop building and staining was observed near the secondary containment basin and hydrocarbon sheens were observed in the parking lot.

- One pole-mounted transformer is located across N. Poplar Street east of the shop building, and four other pole-mounted transformers are located across N. Poplar Street from the northeast corner of the site. One old transformer from the salvage business is still located inside the shop building. The active units are owned and serviced by Texas New Mexico Power Company (TNMP) and one of the four is considered to possibly contain PCBs.

- The remaining transformer inside the shop at the site has a "No PCBs" sticker and is left over from the transformer salvage operations at the site.

- Terra-Solve observed numerous unidentified containers on the property, mostly inside and near the shop building and on-site trash cans for authorized disposal. However, a large amount of debris and parts are stored on site.

As stated earlier, the future planned use of the site is for a parking lot for Leonard ISD.

### Project Overview

This site is located adjacent to a high school, a school-owned daycare, and several residences. Investigation of the site began in 1990 by both EPA and TCEQ contractors, and samples collected indicated elevated levels of PCBs on the site and on some adjacent properties, yet no cleanup has ever been conducted. Please see the attached comprehensive chronology of the case and a figure showing the previous sampling points and their PCB concentrations.

# *CHRONOLOGY OF EVENTS*

**FORMER F.J. DOYLE SALVAGE TRANSFORMERS**
(b) (6) [redacted]
**LEONARD, FANNIN COUNTY, TEXAS**

**EPA CERCLIS NO. TXD980865109 / TCEQ SWR 80951**
**TERRA-SOLVE PROJECT NO. 09724**

| DATE | ACTIVITY |
|---|---|
| ***1974-1989*** | |
| 1974 | Mr. Frank Doyle began operations at the site for reclamation of electrical transformers. The wiring and scrap metal were recycled and the residual oil was used for weed killer both on site and was distributed to others within the City of Leonard. **[Note that Terra-Solve was informed by the owner the site began operations in 1976].** |
| 1976 | Mr. Doyle indicated that after this date, no transformers containing PCBs were accepted at the facility. |
| 01/21/88 | Mr. Doyle began application to the Texas Air Control Board (TACB) for a special air operating permit to allow for operation of a heat cleaning unit at the site. |
| 03/22/88 | A public hearing was held on the above air permit application. |
| 06/27/88 | TACB issued an Agreement and Stipulation of Facts in lieu of the hearing on June 28, 1988. |
| 07/15/88 | TACB issued an order so the permit could not later be challenged by its opponents. |
| 08/23/88 | TACB issued the permit |
| 04/22/89 | Mr. Doyle applied for the air operating permit |
| ***1990*** | |
| 07/20/90 | EPA conducted a **PCB Inspection** at the site. *No record of this work has been located by subsequent EPA contractors even as early as May 1997.* |
| 10/12/90 | Ecology & Environment Technical Assistance Team (TAT), an EPA contractor, conducted a **Site Assessment** sampling investigation. *No record of this work has been located by subsequent EPA contractors even as early as May 1997.* |
| ***1991 - 1992*** | |
| 04/05/91 | Texas Air Control Board (TACB) issued an air permit to allow for operation of a combustion unit at the site. |
| 04/19/91 | Ecology & Environment TAT, an EPA contractor, conducted another **Site Assessment** sampling investigation. *No record of this work has been located by subsequent EPA contractors even as early as May 1997.* |

| | |
|---|---|
| ***1993-1994*** | |
| 1993 | Mr. Frank Doyle registered the site with TCEQ for various non-hazardous waste disposal for non-PCB oil, ash residue, plant refuse, various storage containers, and a Dumpster. |
| 09/07/94 | EPA conducted another **PCB Inspection** at the site. *No record of this work has been located by subsequent EPA contractors even as early as May 1997.* |
| ***1995-1996*** | |
| 05/23-24/95 | Worldwide Reclamation, a Doyle contractor, under supervision of EPA, conducted surface and subsurface **soil sampling**. *No record of this work has been located by subsequent EPA contractors even as early as May 1997.* |
| 07/10-12/95 | Ecology and Environment TAT, an EPA contractor, conducted a **Site Assessment (SA)** sampling investigation. A total of 68 samples were collected from the site, the alleyway, and the neighboring residences to the south, west, and east. Elevated levels of PCBs were found both on- and off-site. On-site levels ranged from 50.9 ppm to 2,730 ppm. Alleyway levels ranged from 5.7 ppm top 857 ppm while off-site residence levels ranged from 10.44 ppm to 37.7 ppm |
| 07/95 | Site was entered in CERCLIS database. |
| 08/31/95 | Ecology and Environment, EPA TAT, issued a **Site Assessment (SA) Report** recounting the above findings and requested a meeting with Mr. Frank Doyle at their offices no later than 09/15/95 to discuss *"removing and disposing of this contamination in an expeditious manner."* |
| 10/4/95 | Mr. Doyle met with three EPA officials as requested above. The contents of this meeting are unknown. However, files indicate calculations regarding the cubic yardage of affected materials were made by hand; these calculations show 94.21 cubic yards of on-site soil and 86.98 cubic yards of off-site soil for a total of 181.19 cubic yards would be needed to be removed presumably to meet the above requirements. |
| ***1997*** | |
| 01/97 | Frank Doyle retired and Gary Doyle, his son, became the operator of the site. |
| 05/20/97 | Fluor Daniel, EPA TAT, conducted a site reconnaissance. EPA issued its **Preliminary Assessment Report (PA)** later that month. This report set that groundwater and soil exposure pathways were the only exposure pathways of concern. |
| 07/21/97 | EPA Screening Site Inspection (SSI) was approved to evaluate these pathways. |
| 12/18/97 | TCEQ issued a **Screening Site Inspection (SSI) Work Plan** to allow for further evaluation of the site using the above pathways of concern. |
| ***1998 - 1999*** | |
| 01/13-14/98 | TCEQ personnel conducted SSI work with sampling of city water supply wells and collection of on- and off-site soil samples. The groundwater samples did not contain metals or PCBs. Analysis of soil samples from 17 locations indicated that |

| | |
|---|---|
| | moderate levels of copper were detected at two on-site sample locations. PCBs were found on site and along drainage ditches away from the site. |
| 09/98 | TCEQ issued **SSI Report** on the above findings. |
| 08/99 | The site ceased operations. |
| ***2000-2009*** | |
| *06/29/00* | The Texas Department of Health (TDH), under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), issued a **Health Consultation Report** which recommended that further delineation of the extent of PCB-affected soil be conducted, or that the soil be removed. |
| 2001 | Based on the above, the ATSDR chose not to enter the site into National Priorities List (NPL) for superfund sites. |
| *07/14/06* | TCEQ issued Unit Closure Request Letter to Mr. Frank J. Doyle. |
| *10/23/06* | Danny Doyle responded to the above letter noting the passing of his father earlier that year and requesting clarification on what TCEQ was specifically requesting. |
| *01/26/07* | TCEQ responded to the above letter directing that a closure report for the waste management units (WMUs) be submitted and that an **Affected Property Assessment Report (APAR)** be completed. |
| *02/09/07* | Mr. Danny Doyle emailed a response to the above letter. |
| 09/05/08 | TCEQ issued Second Request Letter reiterating the 01/26/07 letter requirements above. |
| 08/10/09 | TCEQ created a Case File Memorandum which noted that due to the lack of response to the above letters, the case was being considered for Notice of Violation (NOV) and that the 3rd letter would be the NOV. |
| *08/24/09* | Mr. Danny Doyle emailed again to TCEQ regarding the above letter in anticipation of a potential sale of the property. |
| *09/11/09* | TCEQ responded to the above email with a new point of contact, Mr. Pindy Lall. |
| 11/05/09 | A client contracted with Terra-Solve to conduct a Phase I ESA of the site. |
| 11/20/09 | Terra-Solve conducted site reconnaissance for the Phase I ESA and met with Mr. Gary Doyle at the site. |
| 11/30/09 | Terra-Solve issued Freedom of Information Act (FOIA) request to EPA. |
| 12/04/09 | EPA issued response letter to the above FOIA request and Terra-Solve issued the Phase I ESA Report to the client noting this response. |
| 12/15/09 | EPA requested an extension in response time to 12/30/10. |

| ***2010 - 2013*** | |
|---|---|
| 01/08/10 | The client faxed additional information from Mr. Doyle to Terra-Solve. This information consisted of the items above with asterisks (*) next to the dates. Terra-Solve contacted Mr. Pindy Lall of TCEQ, the latest point of contact, and he requested a few days to familiarize himself with the case file. |
| 01/19/10 | Mr. Pindy Lall of TCEQ contacted Terra-Solve to discuss the case. He indicated that the items requested in the 01/26/07 letter (WMU closure reports and APAR investigation) are still required to complete work on the site. |
| 01/30/10 | Terra-Solve received a CD-ROM from EPA with the various reports referred to in the above entries and assembled this comprehensive chronology of site events. |
| 02/03/10 | Terra-Solve submitted a proposal to the client to arrange for and attend a meeting with TCEQ to discuss |
| 02/08/10 | Terra-Solve received a copy of the Central File Registry records from TCEQ and updated this chronology. |
| 03/22/10 | Terra-Solve received authorization to send the above information to TCEQ from the client and its attorney, Abernathy Roeder. |
| 04/14/10 | Terra-Solve submitted this information to Mr. Pindy Lall of TCEQ after several weeks of attempted contacts. Mr. Lall later contacted Terra-Solve regarding the above email submissions of EPA documents and directed Terra-Solve to submit a formal letter requesting review of this information. |
| 04/15/10 | Terra-Solve submitted the above-requested letter. |
| 06/18/10 | TCEQ issued a letter to Terra-Solve which outlined a "path to closure" for the site. Specifically, the letter directed the following: |

(1) Surface soils be delineated horizontally to 1.1 ppm PCBs and copper and hexachlorobenzene to their Risk-Based levels;
(2) Vertical soil delineation to method quantitation limits (MQLs) or collect groundwater samples, in which case the entire soil column is assumed to be contaminated;
(3) If the site enters the Voluntary Cleanup Program (VCP), a groundwater sample will be required;
(4) If the entire soil column is assumed to be contaminated, a control such as a parking lot that serves as impervious cover may be implemented to prevent exposure, but such a measure would require maintenance to ensure integrity of the lot, and any uncovered areas would have to be removed, decontaminated, and/or otherwise controlled; and
(5) Demonstration that the drainage ditches are not impacting surface water will be needed.

| ***2014*** | |
|---|---|
| 04/24/14 | Terra-Solve contacted by Abernathy Roeder regarding a possible sale of the subject property and asked to facilitate a meeting between all regulatory parties. |
| 06/26/14 | Terra-Solve and Abernathy Roeder met with Mr. James Sales of EPA Region VI at his office and also teleconferenced in Mr. Pindy Lall of TCEQ. |
| 08/11/14 | Terra-Solve and Abernathy Roeder met with other interested parties at the site to go over probably boring and well locations. It was determined that if the likely amount of agency-directed assessment and analysis was going to ultimately be required, the cost of such work would likely make the project untenable based on the value of the property. It was agreed that Terra-Solve would contact Pindy Lall to discuss these concerns. |
| 08/13/14 | After receiving non-deliverable replies to emails to Pindy Lall, Terra-Solve learned that Mr. Lall left the agency a few days previously. Terra-Solve attempted to find who the new coordinator is by telephone and in person on 08/14/14. |
| 08/22/14 | Terra-Solve submitted a letter to Mr. Richard Scharlach of TCEQ recapping the recent (2014) events and requesting a new case coordinator be assigned. |
| 08/25/14 | TCEQ assigned a new coordinator, Mr. Rodney Bryant. |
| 09/02/14 | TCEQ assigned a different coordinator, Ms. Eleanor Wehner, PG. Terra-Solve conferred with Ms. Wehner and wrote an update letter dated 09/10/14 which gave some hope for a reduced sampling scheme, particularly if the site did NOT go into the VCP. She did note, however, that a Drinking Water Survey was needed. |
| 09/12/14 | Terra-Solve conferred with Ms. Stephanie Kirschner of TCEQ regarding the availability of brownfields funds for the site. As the site is being contemplated for purchase by a non-profit group, these monies are available. A letter providing this information was submitted to the parties on 09/15/14 and a proposal for completion of the forms was submitted on 09/16/14. |
| 10/21/14 | Terra-Solve was engaged to complete the Brownfields Site Assessment (BSA) application. |
| 10/23/14 | Terra-Solve submitted the BSA application to Abernathy Roeder and the client. |
| ***2015*** | |
| 04/21/15 | Terra-Solve contacted by (b) (6) [redacted] regarding redevelopment of the site. Terra-Solve confirmed with Leonard ISD that no conflict of interest exists. |
| 04/24/15 | Terra-Solve spoke with Ms. Wehner who confirmed that she sent a letter to Mr. Doyle on 03/30/15 directing that the APAR and WMU Closure be conducted forthwith or that enforcement procedures would begin. |
| 04/27/15 | Terra-Solve met with (b) (6) [redacted] to discuss the site. |

## *Section 1.3 Geology/Hydrogeology*

According to the *Geologic Atlas of Texas, Sherman Sheet* (1967, revised 1991) the property is located on Upper Cretaceous-age Gober Chalk. This formation is characterized by bluish-gray chalk with clay that weathers white and is brittle. This formation is up to 400 feet thick but is thinner in the east.

The *Soil Survey of Fannin County, Texas* (NRCS on line data, 2001) indicates that the on-site soils are classified as Fairlie-Dalco complex, 1-3 percent slopes. These soils consist of deep, moderately well drained soils. The typical soil profile consists of dark-gray to black silty clay loam to a depth of 24 inches underlain to a depth of 35 inches by dark gray silty clay. From 35-54 inches black clay is present overlying white platy chalk of the Austin Chalk Formation/Gober Chalk.

Records of the previous assessments conducted by the TCEQ and EPA have been lost to time. A subsurface soil investigation would be needed to verify actual soil types and conditions. Such an evaluation was beyond the scope of this assessment.

As interpreted from the USGS topographic map, local shallow groundwater in the property area is anticipated to be between 10 feet and 20 feet below ground surface. Groundwater flow direction is likely generally south to southwestwardly toward Arnold Creek. Therefore, in assessing potential external environmental impact, properties located north to northeast of the property are of primary concern due to their inferred up gradient locations. However, actual groundwater gradient is often locally influenced by factors such as underground structures, seasonal fluctuations, soil and bedrock geology, production wells, and other factors beyond the scope of this study.

Based on Terra-Solve's review of the Geological Atlas of Texas, Sherman Sheet (1967, revised 1991), and Ground-Water Quality of Texas (1989), the property is underlain by the Trinity major aquifer and Woodbine minor aquifer. The upper Woodbine could be a minor source of water at a depth of 100-200 feet in its lower, more sandy sections. The Trinity Aquifer consists of the early Cretaceous age Paluxy, Glen Rose, and Twin Mountains-Travis Peak formations. Extensive historical development of the Trinity Aquifer in the Dallas-Fort Worth region has caused the water level to drop as much as 550 feet. Since the mid-1970s, many public water supply wells have been abandoned, and surface water is currently the primary water source for the area. However, the wells in Leonard are still in use.

The State Database of Well Information (SDWI) of the Texas Water Development Board database (Figure 2C) indicates that there is one registered water well within 0.5 miles of the property. This one well is an active public supply well, City Well #1, installed in 1957 in the Woodbine Formation and is 1,690 feet deep. This well is the primary source of drinking water for the City of Leonard (Appendix 13, Photograph 8).

Estimated groundwater levels and/or flow directions may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations, and can be more accurately determined through the installation of groundwater monitoring wells.

***Table 1A - Sources of Release***

List the sources (for example: landfill, tank, impoundment) being addressed under this assessment which are contributing COCs to each affected property. Use the inputs from the list provided below to complete Table 1A. For each source, provide the type of source, applicable NOR unit or SWMU numbers, substances of potential concern, the size of the source (capacity, area, or volume as applicable), and specify the status of the release source. Indicate whether a release from the source has been confirmed, provide the method of release discovery, and the date the release was discovered. Include the date if the status is "closed."

**Inputs list for Table 1A (do not include this list in the report)**

| Column 1 | Column 2 | Column 3 | Column 4 |
|---|---|---|---|
| Types of Potential Sources | Substances of Potential Concern | Status of Source | Method of Release Discovery |
| Container | Acid solution | Active | Site assessment |
| Container storage area | Adhesives/epoxy | Inactive | Spill incident |
| Landfills | Caustic solution | Abandoned | NAPL discovery |
| Piping/distribution system | Dioxins/furans | Closed - specify date closed | Water well impact |
| Spills | Explosives | Other (specify) | Vapor impact |
| Sump | Fertilizer | | Surface water/sediment impact |
| Surface impoundments/ponds/ lagoons | Halogenated hydrocarbons | | Release detection equipment |
| Tanks | Lacquer/varnish | | Other (specify) |
| Wash/repair areas | Metals | | |
| Waste piles | Paint/ink/dyes | | |
| Waste treatment unit | Paint thinner | | |
| Waste water treatment unit | PCBs | | |
| Other (specify) | Pesticide (herbicide, insecticide) | | |
| | Petroleum Hydrocarbons (specify): gasoline, aviation gas, jet fuel (type), diesel, lube oil, hydraulic oil, used oil, etc. | | |
| | Radionuclides | | |
| | Wood preservatives | | |
| | Other (specify) | | |

**Table 1A. Sources of Release (see input values on preceding page)**

| Affected property name/number[1] | Name of potential source[2] (supplied by the person) | Type of potential source (select from Column 1 on Inputs list) | NOR unit or SWMU number, if applicable | Substances of potential concern (select from Column 2 on Inputs list) | Size of source (capacity, area, or volume) | Status of source (select from Column 3 on Inputs list) | | Was a release from this source confirmed? (if yes, indicate the discovery method from Column 4 on Inputs list, and date release was discovered) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Status[3]: | If closed or other, list date closed or explain: | No | Yes | Discovery method | Date |
| Site | Transformers | Transformer | 001, 002, & 003 | Oil, PCBs, Metals | Unknown | Abandoned | | | X | Samples | 1990s |
| Off Site | Transformers | Transformer | 001, 002, & 003 | Oil, PCBs, Metals | Unknown | Abandoned | | | X | Samples | 1990s |
| Site | ASTs, Drums | Transformer Oil | 001, 002, & 003 | Oil, PCBs, Metals | Unknown | Unknown | | | X | Samples | 1990s |
| Site | ASTs, Drums | Car maintenance and repair activities | 001, 002, & 003 | Petroleum hydrocarbons, metals, solvents | Unknown | Unknown | | X | | | |
| Site | Dumpster | Plant Trash | 003 | Unknown | 4 yds. | Unknown | | X | | | |
| Off Site | ASTs, Drums | Car maintenance and repair activities | 001, 002, & 003 | Petroleum hydrocarbons, metals, solvents | Unknown | Unknown | | X | | | |

SWMU:
001: Various storage tanks- one 375-gallon AST, two 500-gallon ASTs, and one 55-gallon drum on the concrete pad.
002: High temperature oven to burn varnish off copper.
003: Dumpster, 4 yds. for accumulation of plant trash.

[1] The name or number is an identification of the affected property assigned by the person. Continue using the name or number identification throughout this report and all other correspondence on the affected property.
[2] The potential source is the source of the release. The person determines the name given to the potential source. Examples: northwest tank farm, Main Street landfill, etc.
[3] Specify whether the source status is active, inactive, abandoned, closed, or specify another status as appropriate.

***Table 1B - Potential Off-Site Sources***

**Table 1B. Potential Off-Site Sources**

| Affected property name/number | Off-site facility/ site name | Physical address | Regulatory ID number | Type of operation/ business | Years of operation (if known) | COCs |
|---|---|---|---|---|---|---|
| none | | | | | | |
| | | | | | | |

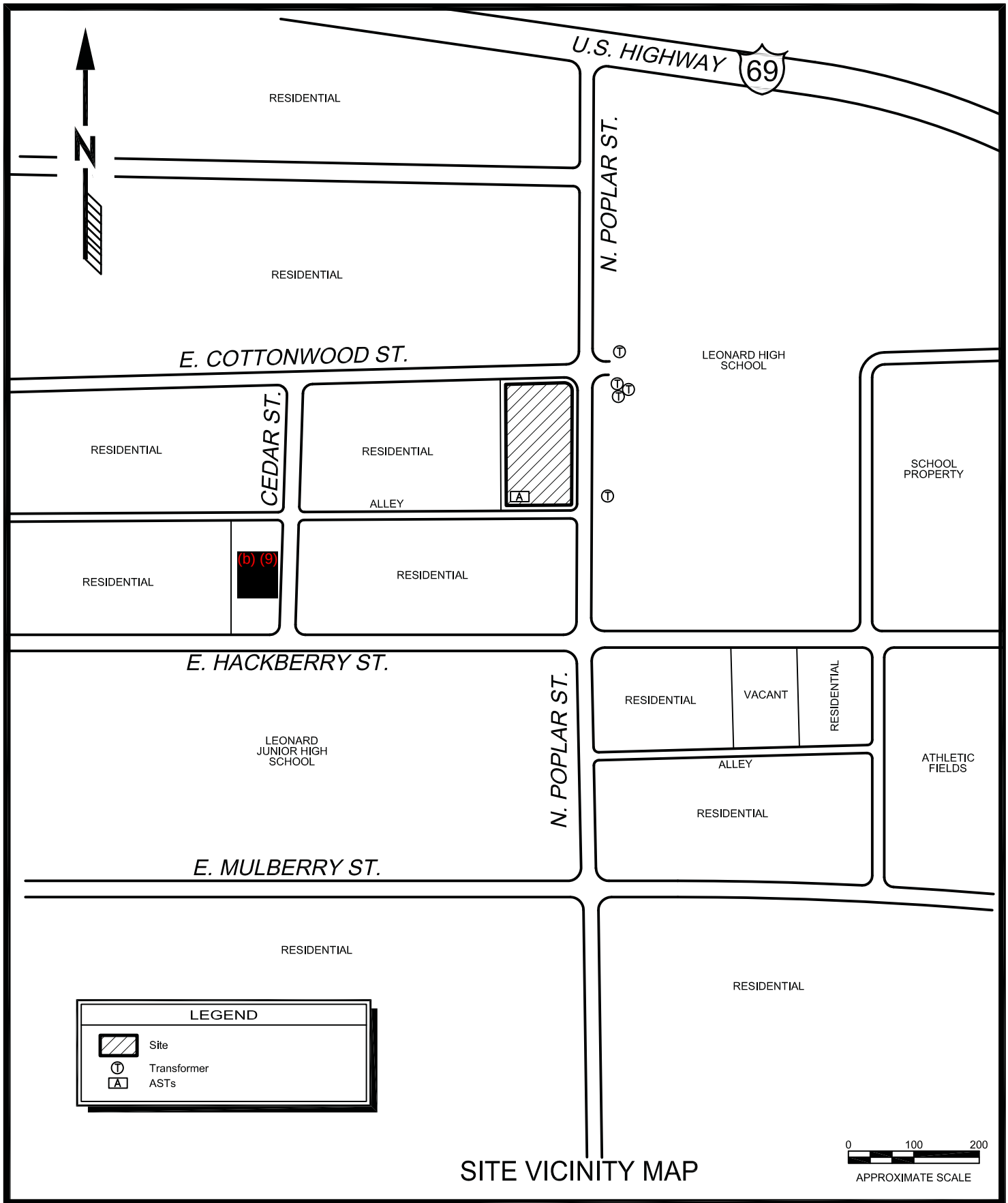
Attached:

***Figure 1A - On-Site Property Map***
Included in the attachments.

***Figure 1B - Affected Property Map***
Included in the attachments.

***Figure 1C - Regional Geologic Map***
Included in the attachments.

***Figure 1D - Regional Geologic Cross Section(s)***
Included in the attachments.



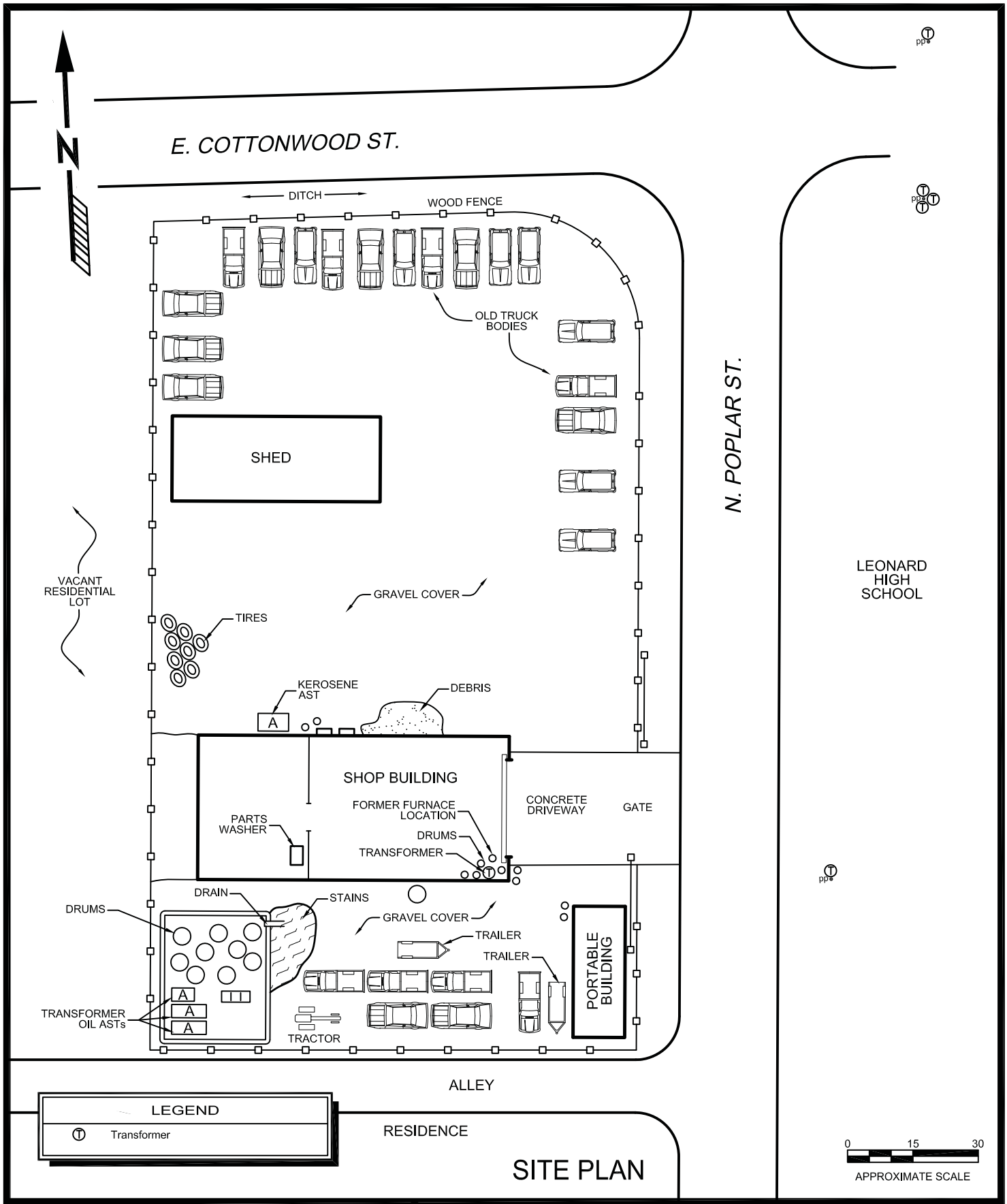

SITE VICINITY MAP

TERRA • SOLVE
ENVIRONMENTAL CONSULTANTS
3216 COMMANDER DRIVE, SUITE 103
CARROLLTON, TX 75006-2518
PHONE (972) 267-1900
FAX (972) 267-1902
RCAS NO. 00530

TWO LOTS OF IMPROVED LAND

APPROXIMATELY 0.344 ACRES
905 N. POPLAR STREET
LEONARD, FANNIN COUNTY, TEXAS

| DATE: | SCALE: |
|---|---|
| NOV. 2009 | SEE ABOVE |
| PROJECT NO.: | FIGURE NO.: |
| 09724 | 1 A |




SITE PLAN

TERRA • SOLVE
ENVIRONMENTAL CONSULTANTS
3216 COMMANDER DRIVE, SUITE 103
CARROLLTON, TX 75006-2518
PHONE (972) 267-1900
FAX (972) 267-1902
RCAS NO. 00530

TWO LOTS OF IMPROVED LAND

APPROXIMATELY 0.344 ACRES
905 N. POPLAR STREET
LEONARD, FANNIN COUNTY, TEXAS

| DATE: | SCALE: |
|---|---|
| NOV. 2009 | SEE ABOVE |
| PROJECT NO.: | FIGURE NO.: |
| 09724 | 1B |

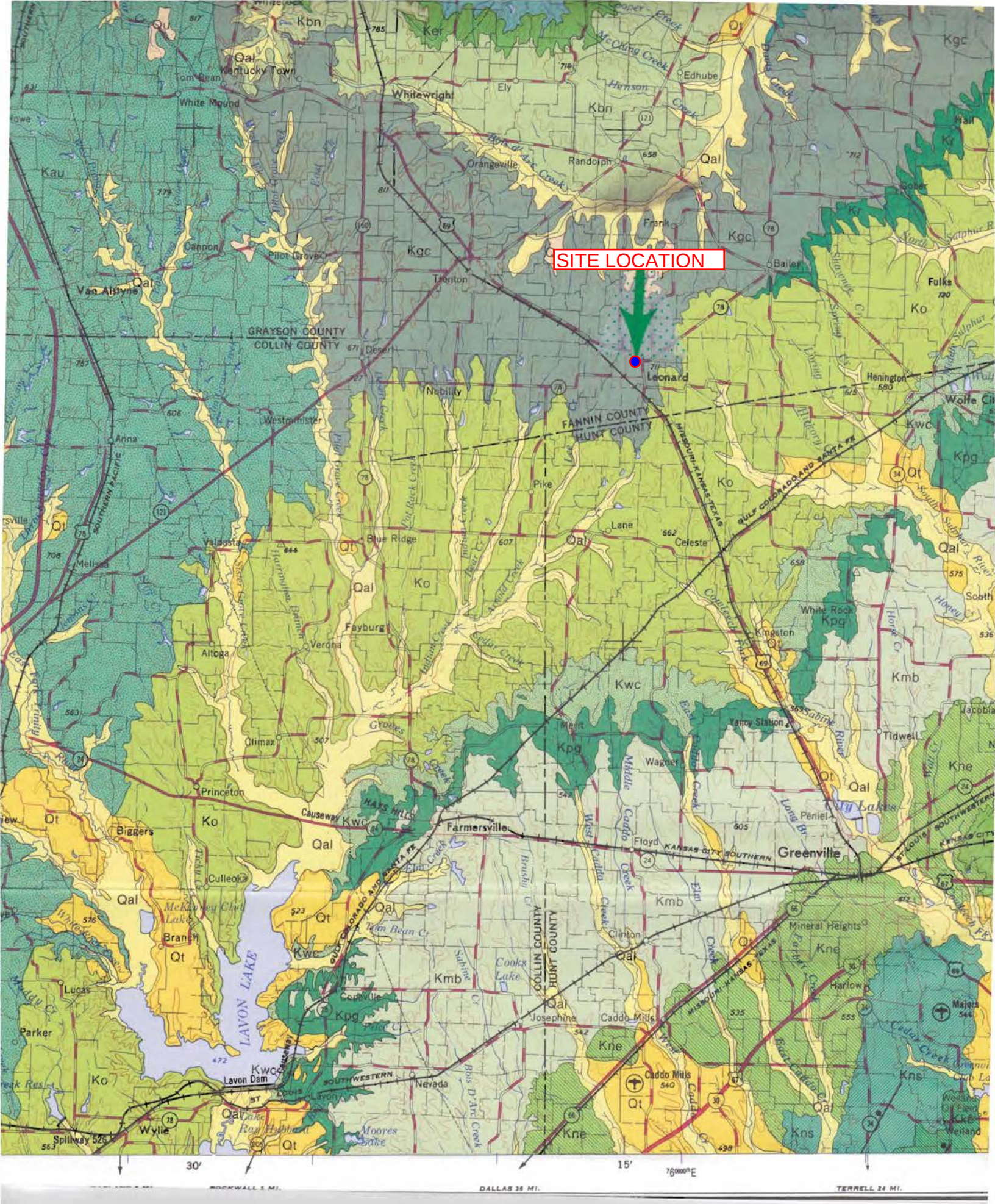



Figure 1C - Regional Geologic Map
Geological Atlas of Texas, Sherman Sheet (1967, revised 1991)

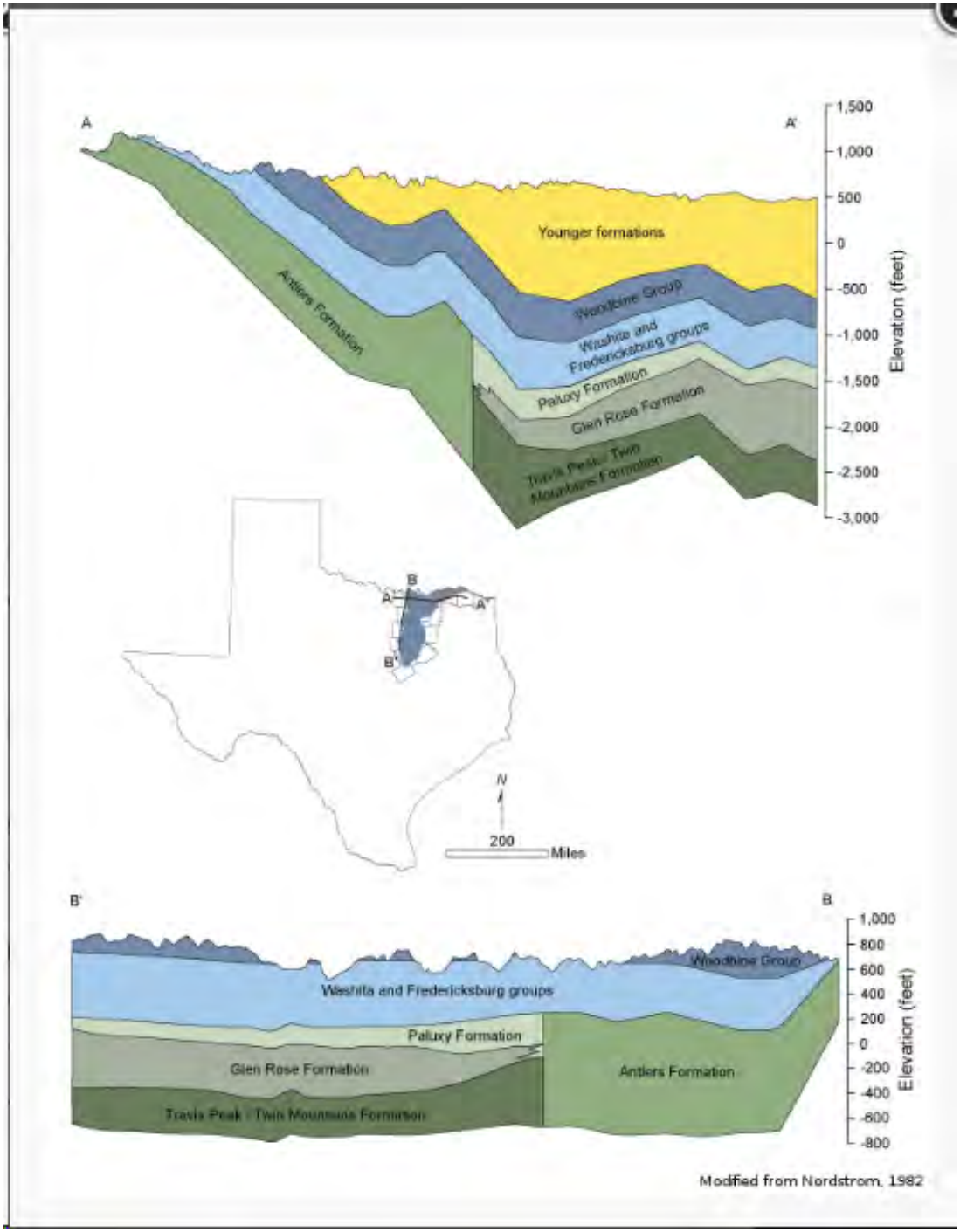



Figure 1D - Regional Geologic Cross Section
https://www.twdb.texas.gov/groundwater/aquifer/minors/woodbine.asp

# Section 2 Exposure Pathways and Groundwater Resource Classification

## *Section 2.1 Source(s) of Potable Water for On-Site Property and Affected Off-Site Properties*

The source(s) of potable water for the real property within the affected property and presumable all the vicinity, are municipal public supply water wells. The supplier is the City of Leonard, the owner of the several wells throughout the city which are used to supply city residences and businesses. The nearest well, No. 18-393701, is located approximately 370 feet southwest of the affected property. This well produces from the Woodbine Formation and is 1,690 feet deep. Given the depth of this well, it is unlikely that it would be impacted from affected shallow groundwater, if present.

No field walking survey has been performed, but it is likely that all real properties within the 500-foot field receptor survey radius are connected to the public water supply.

It is unknown if the City of Leonard has any ordinances or deed restrictions applicable to the affected property that prevent or restrict the installation of water wells.

## *Section 2.2 Field Receptor Survey*

No 500-ft field door-to-door walking receptor survey has been conducted. As part of a Phase I ESA, site reconnaissance was performed by Terra-Solve on November 20, 2009, a limited "drive-by" survey of surrounding properties was conducted. The property (total of 0.344 acre) is bounded by E. Cottonwood Street to the north, N. Poplar Street to the east, a single-family residence to the south, and a vacant lot to the west in the city of Leonard in Fannin County, Texas, 75452. The property is abutted by vacant and single family residential properties. Leonard High School is located to the east across N. Poplar Street.

## *Section 2.3 Records Survey*

As part of a Phase I ESA conducted in 2009, Terra-Solve requested a survey of records on receptors available within one-half mile radius of the affected property, including both on-site and off-site properties. This information, gathered by GeoSearch, Inc., of Austin, Texas, researched the databases of the Texas Water Development Board (TWDB), and the Texas Commission on Environmental Quality (TCEQ). Copies of the records survey results are included in Appendix 5; the list of sources of information used are included in Appendix 16.

## *Section 2.4 Receptor Survey Results*

A single family residences is located north across E. Cottonwood Street. A vacant lot with single a family residence beyond abuts the site on the west side. An alley with a single family residence and a Leonard ISD daycare facility beyond is located south of the site. Leonard High School is located to the east across N. Poplar Street.

The general land use in the area is primarily residential. The site is located on a topographic high and the immediate site vicinity slopes away in all directions. Based on Terra-Solve's review of the United States Geological Survey (USGS) 7.5 Minute Topographic Map of the Leonard, Texas Quadrangle (1964) the property is located at an elevation of approximately 735 feet above mean sea level (MSL). The topography of the area is gently rolling to the south toward Arnold Creek. A copy of the topographic map is included in Appendix H.

One water well was found in the 0.5-mile radius search. No intermittent or perennial surface water bodies are present in the immediate area; drainage ditches are located along E. Cottonwood Street on the north side of the site and along E. Poplar Street on the east side of the site. The nearest surface water body, Arnold Creek, is located approximately one mile south-southwest of the site.

One water well was noted in the database search within the 0.5-mile radius search of the site. Based on Terra-Solve's review of the Geological Atlas of Texas, Sherman Sheet (1967, revised 1991), and Ground-Water Quality of Texas (1989), the property is underlain by the Trinity major aquifer and Woodbine minor aquifer. The upper Woodbine could be a minor source of water at a depth of 100-200 feet in its lower, more sandy sections. The Trinity Aquifer consists of the early Cretaceous age Paluxy, Glen Rose, and Twin Mountains-Travis Peak formations. Extensive historical development of the Trinity Aquifer in the Dallas-Fort Worth region has caused the water level to drop as much as 550 feet. Since the mid-1970s, many public water supply wells have been abandoned, and surface water is currently the primary water source for the area. However, the wells in Leonard are still in use. The State Database of Well Information (SDWI) of the Texas Water Development Board database (included in Appendix K) indicates that there is one registered water well within 0.5 miles of the property. This one well is an active public supply well, City Well #1, installed in 1957 in the Woodbine Formation and is 1,690 feet deep. This well is the primary source of drinking water for the City of Leonard. Given the depth of this well, it is unlikely that it would be impacted from affected shallow groundwater, if present.

## Section 2.5 Groundwater Resource Classification

Groundwater beneath the site has not been assessed.

## Section 2.6 Exposure Pathways

The previous soil samples collected by EPA and TCEQ in the early 1990s identified PCBs, copper, and hexachlorobenzene in excess of the current Tier I Residential 0.5-acre source area PCLs. These levels were identified on the site, on the residential vacant lot to the west, in the alley, and on residential properties to the south.

The primary exposure pathways for PCBs is through contact with soil or sediment. According to the EPA, PCBs are very persistent, hydrophobic, and generally do not migrate. However, there are some site characteristics that may have a bearing on the potential of PCBs to migrate. For example, PCBs in oil will be mobile if the oil itself is present in a volume large enough to physically move a significant distance from the source. Soil or sediment characteristics that affect the mobility of the PCBs include soil density, particle size distribution, moisture content, and permeability. Additionally, meteorological and chemical characteristics such as amount of precipitation, organic carbon content, and the presence of organic colloids also affect PCB

mobility.

Because of the stability of PCBs, many exposure routes must be considered: dermal exposure; ingestion of PCB-contaminated soil, water, and food; and inhalation of ambient air contaminated with PCBs. PCBs have a high potential for bioaccumulation, which is an important factor to consider due to their ability to accumulate in aquatic environments such as lakes, rivers, and harbors. Although not very common, volatilization and other transport mechanisms may remove PCBs from the contaminated soil or sediment or entrain them into the air. Remedies involving excavation may create short-term exposures to workers and surrounding communities from inhalation of dust emissions (EPA/540/S-93/506, October 1993: *Technology Alternatives for the Remediation of PCB-Contaminated Soil and Sediment*). PCBs are recognized as a carcinogen.

Generally, copper is not mobile in soils. It is attracted to soil organic matter and clay minerals. In general, maximum retention of cationic metals occurs at pH>7 and maximum retention of anionic metals occurs at pH<7. Because of the complexity of the soil-waste system, with its myriad of surface types and solution composition, such a generalization may not hold true. For example, cationic metal mobility has been observed to increase with increasing pH due to the formation of metal complexes with dissolved organic matter. Copper is retained in soils through exchange and specific adsorption mechanisms. At concentrations typically found in native soils, Cu precipitates are unstable. This may not be the case in waste-soil systems and precipitation may be an important mechanism of retention. It is suggested that a clay mineral exchange phase may serve as a sink for Cu in noncalcareous soils. In calcareous soils, specific adsorption of Cu onto $CaCO_3$ surfaces may control Cu concentration in solution. Copper is adsorbed to a greater extent by soils and soil constituents than the other metals studied, with the exception of Pb. Copper, however, has a high affinity for soluble organic ligands and the formation of these complexes may greatly increase Cu mobility in soils (EPA/540/S-92/018, October 1992: *Behavior of Metals in Soils*).

Hexachlorobenzene (HCB) is classified as a carcinogen. HCB is a highly persistent environmental toxin that was synthesized and used from the 1940s to the late 1970s as a fungicide on grain seeds such as wheat. The use of chlorinated organic compounds in industrial chlorination processes is also known to inadvertently generate HCB wastes.

HCB is considered a probable human carcinogen and is toxic by all routes of exposure. The general population appears to be exposed to very low concentrations of HCB, primarily through ingestion of meat, dairy products, poultry, and fish. Ingestion of HCB-contaminated fish is potentially the most significant source of exposure. HCB bioaccumulates in fish, marine animals, birds, lichens, and their predators. HCB has been found in fish and wildlife throughout the U.S., though the Great Lakes and Gulf coast are areas of particularly high contamination.

HCB is a highly persistent environmental toxin that degrades slowly in air and remains in the atmosphere through long range transport. Current research suggests that HCB has a half-life from 2.7 to 6 years in water and in the atmosphere, and may have a half-life of more than 6 years in soil. In water, HCB binds to sediments and suspended matter. In soil, HCB binds strongly and generally does not leach to water. Transport to ground water is slow, but varies with the organic makeup of the soil, as HCB tends to bind more strongly to soils with high organic content. Co-solvents in active/inactive sites can mobilize HCB (The USEPA Persistent, Bioaccumulative and Toxic Pollutants (PBT) HCB Workgroup, November 2000: *Draft PBT National Action Plan For Hexachlorobenzene (HCB)*
*for Public Review*).

Transformer salvage operations ceased at the site in August of 1999. Subsequently the site was leased to various tenants that performed vehicle maintenance and operated a tire shop. The site improvements have not changed since transformer salvage ceased. The site remains unpaved with various improvements. The AST bulk oil storage area WMU has reportedly been closed.

Runoff from the property has the potential to affect surface soils and drainage ditches adjacent to the site. The nearest surface water is located approximately one mile from the site and is not expected to be affected by a release from the site, however sediment along the drainage ditches remain a potential source for future surface water impacts, if left unaddressed.

***Table 2A - Water Well Summary***

Complete this table if water wells are identified in either the 500-ft receptor survey or the one-half mile records survey. Provide the information available on the water wells identified in the survey radius. Include wells found from the sources of information. Highlight the threatened or affected wells.

**Table 2A. Water Well Summary**

| Well no. / designation | Well owner's name of record | Distance from affected property (ft.) | Screened interval/open interval (ft) | Cemented interval (ft) | Completion type | Total depth | Date drilled | Producing formation | Current water use[1] | Current status[2] | Data source[3] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Downgradient Wells | | | | | | | | | | | |
| City Well #1, 18-39-701 | City Of Leonard | 370 | 1523-1673 | Unknown | Under-reamed, gravel packed | 1,690 | 1957 | Woodbine | PS | Act | TWDB |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Cross-gradient Wells | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Upgradient Wells | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

[1] Current water use: Dom - domestic; PS - public supply/municipal; Ind - industrial; Comm - commercial; Irr - irrigation; Liv - livestock
[2] Current status: Act - active; Ab - abandoned/not in use; SB - standby/backup; P&A - plugged and abandoned
[3] Indicate the specific primary source of well information.

***Table 2B - Affected Water Well Summary***

List the threatened or affected water wells from Table 2A in this table. Provide the owner's name, telephone number, property address, and name of tenant or easement holder. Document the sources of information used to obtain this information in Appendix 16.

**Table 2B. Threatened and Affected Water Well Summary**

| Well number/ designation | Current owner and phone number | Property address and/or legal description[1] | Tenants and/or easement holders[2] | Samples collected | | Do COC concentrations exceed Tier 1 $^{GW}GW_{Ing}$ PCLs? | |
|---|---|---|---|---|---|---|---|
| | | | | Yes | No | Yes | No |
| None known | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

[1] Provide the address of the property containing the threatened or affected well. If the property does not have an address or if property plot maps are provided, include the legal description of the property (i.e., lot and block numbers, appraisal district reference numbers, etc.)

[2] If samples were collected on property not owned by the person and results exceed Tier 1 PCLs, provide the names of tenants and/or easement holders.

***Table 2C - Complete or Reasonably Anticipated to be Complete Exposure Pathways***
Use this table to indicate the complete or reasonably anticipated to be complete exposure pathways by checking the applicable pathways based on the media affected by COCs and the potential for migration of COCs. The shaded boxes are those pathways considered complete per the TRRP rule. If a shaded box is not checked, explain in Section 2.6 why the pathway is not complete.

**Table 2C. Complete or Reasonably Anticipated to be Complete Exposure Pathways**

| Exposure pathway | Surface soil[1] | Subsurface soil[2] | Groundwater | Surface water/ sediment |
|---|---|---|---|---|
| ${}^{Tot}Soil_{Comb}$[3] | X | NA | NA | NA |
| ${}^{Air}Soil_{Inh\text{-}V}$ | NA | | | |
| ${}^{GW}Soil_{Ing}$ or ${}^{GW}Soil_{Class3}$ | X | | | |
| ${}^{GW}GW_{Ing}$ or ${}^{GW}GW_{Class3}$ | NA | NA | UNKNOWN | |
| ${}^{Air}GW_{Inh\text{-}V}$ | | | UNKNOWN | |
| ${}^{SW}GW$ | | | | |
| ${}^{Sed}GW$ | | | | |
| ${}^{SW}SW$ or ${}^{Sed}Sed$ | | | NA | X |
| Other (specify)[4] | | | | |

Surface soil has not been assessed to the residential 0-15 feet interval. Groundwater has not been assessed.

Attached:
***Figure 2A - Potential Receptors Map***

***Figure 2B - Field Survey Photographs***

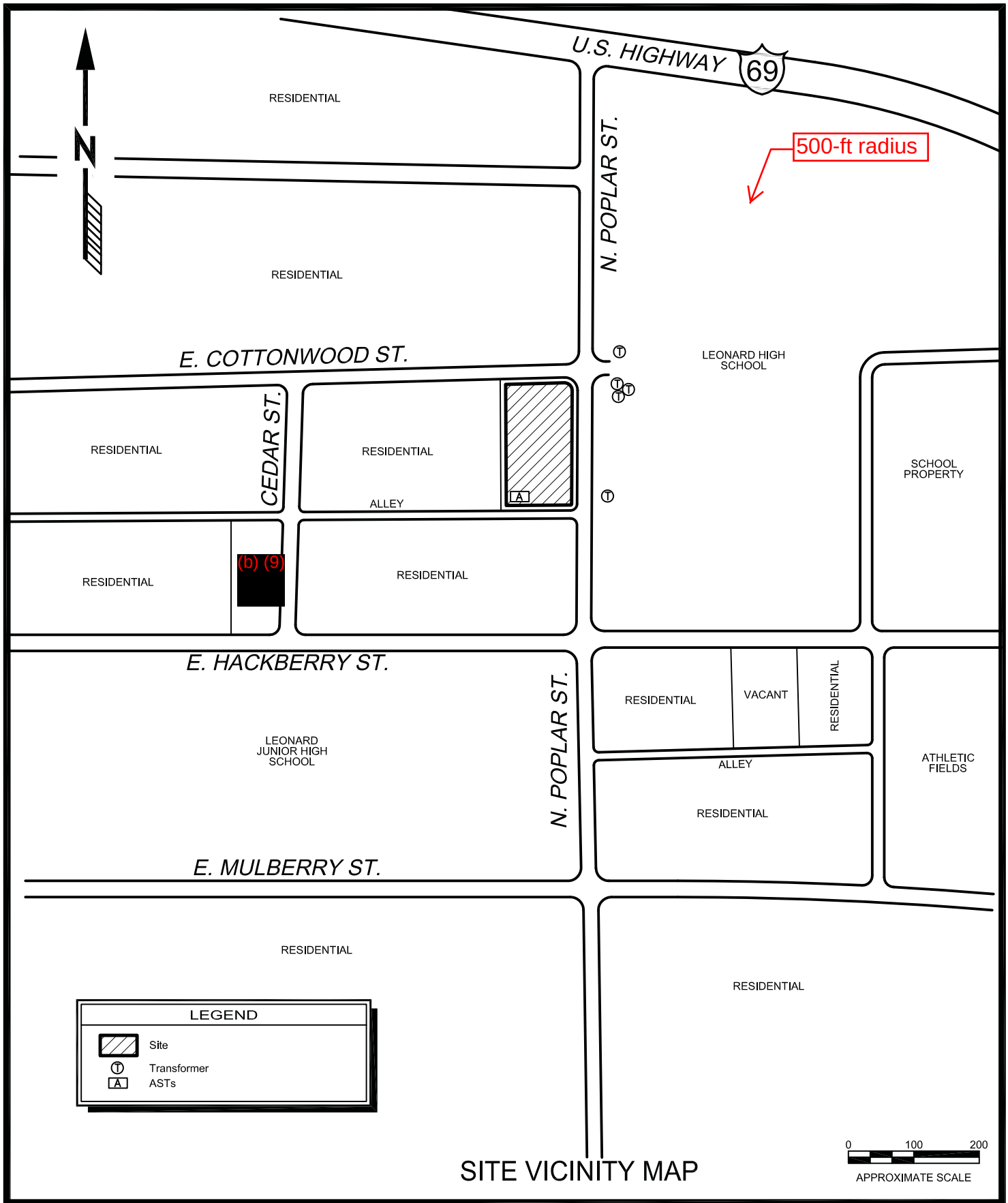
***Figure 2C - Water Well Map***

***Attachment 2A - Tier 1 Ecological Exclusion Criteria Checklist***
Complete this checklist for each affected property. Refer to Chapter 307, Texas Surface Water Quality Standards, *Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas* (RG-263 revised, and future updates), and *Determining PCLs for Surface Water and Sediment* (RG-366/TRRP-24) for the definition of surface water, surface water types, uses, basin numbers, and state-designated stream segment numbers. The person and the preparer must sign this checklist.

Not enough information is available to complete this section.

***Attachment 2B - Tier 1 Ecological Exclusion Criteria Supporting Documentation***
As required in the Tier 1 Ecological Exclusion Criteria Checklist, attach a brief statement (not to exceed 1

[1] Residential: soils from 0-15 feet deep, or to bedrock or groundwater-bearing unit if shallower.
Commercial/industrial: soils from 0-5 feet deep, or to bedrock or groundwater-bearing unit if shallower.
[2] The vadose zone beneath the surface soil extending to the groundwater-bearing unit, and including unsaturated zones between stratified groundwater-bearing units.
[3] Residential: ${}^{Air}Soil_{Inh\text{-}VP} + {}^{Soil}Soil_{Ing} + {}^{Soil}Soil_{Derm} + {}^{Veg}Soil_{Ing}$
Commercial/industrial: ${}^{Air}Soil_{Inh\text{-}VP} + {}^{Soil}Soil_{Ing} + {}^{Soil}Soil_{Derm}$
[4] If other exposure pathways are identified here, include those pathways in the derivation of assessment levels and evaluation of critical PCLs.




SITE VICINITY MAP

TERRA • SOLVE
ENVIRONMENTAL CONSULTANTS
3216 COMMANDER DRIVE, SUITE 103
CARROLLTON, TX 75006-2518
PHONE (972) 267-1900
FAX (972) 267-1902
RCAS NO. 00530

TWO LOTS OF IMPROVED LAND

APPROXIMATELY 0.344 ACRES
905 N. POPLAR STREET
LEONARD, FANNIN COUNTY, TEXAS

| DATE: | SCALE: |
|---|---|
| NOV. 2009 | SEE ABOVE |
| PROJECT NO.: 09724 | FIGURE NO.: 2A |

Photograph 1: View looking west of the automobile repair shop building. This building was previously used as the transformer recycling facility.

Photograph 2: View looking south of the west property boundary showing the shed (left) and the vacant lot located west of the site.

Photograph 3: View looking southeast of the portable building and of the exterior of the automobile repair shop.

Photograph 4: View looking northwest the three aboveground storage tanks and multiple 55-gallon drums in and near the spill containment sump.

Photograph 5: View looking west showing the northern property line with E. Cottonwood Street and the residential neighborhood beyond.

Photograph 6: View looking north along N. Poplar Street showing the school buildings east of the site. Also note the one transformed on the power pole in the foreground (#N6497) and in the three in the background (Nos. N23508, N21884, and N21888).

Photograph 7: View looking west of the alleyway south of the site with the residences beyond.

Photograph 8: View looking southeast of City Water Well #1 and its storage tanks located approximately 370 feet from the site

Photograph 9: View inside the shop building showing the parts washer and other chemicals.

Photograph 10: View inside the shop building showing 5-gallon buckets of chemicals and oil, both new and used. Numerous areas of stained concrete are visible in the shop.

Photograph 11: View looking southwest of the drums inside and outside the AST secondary containment basin. Note the drain valve and the stains and hydrocarbon sheen on the standing water.

Photograph 12: View looking southeast the kerosene-dispensing AST, drums, and other debris on the north side of the shop building.

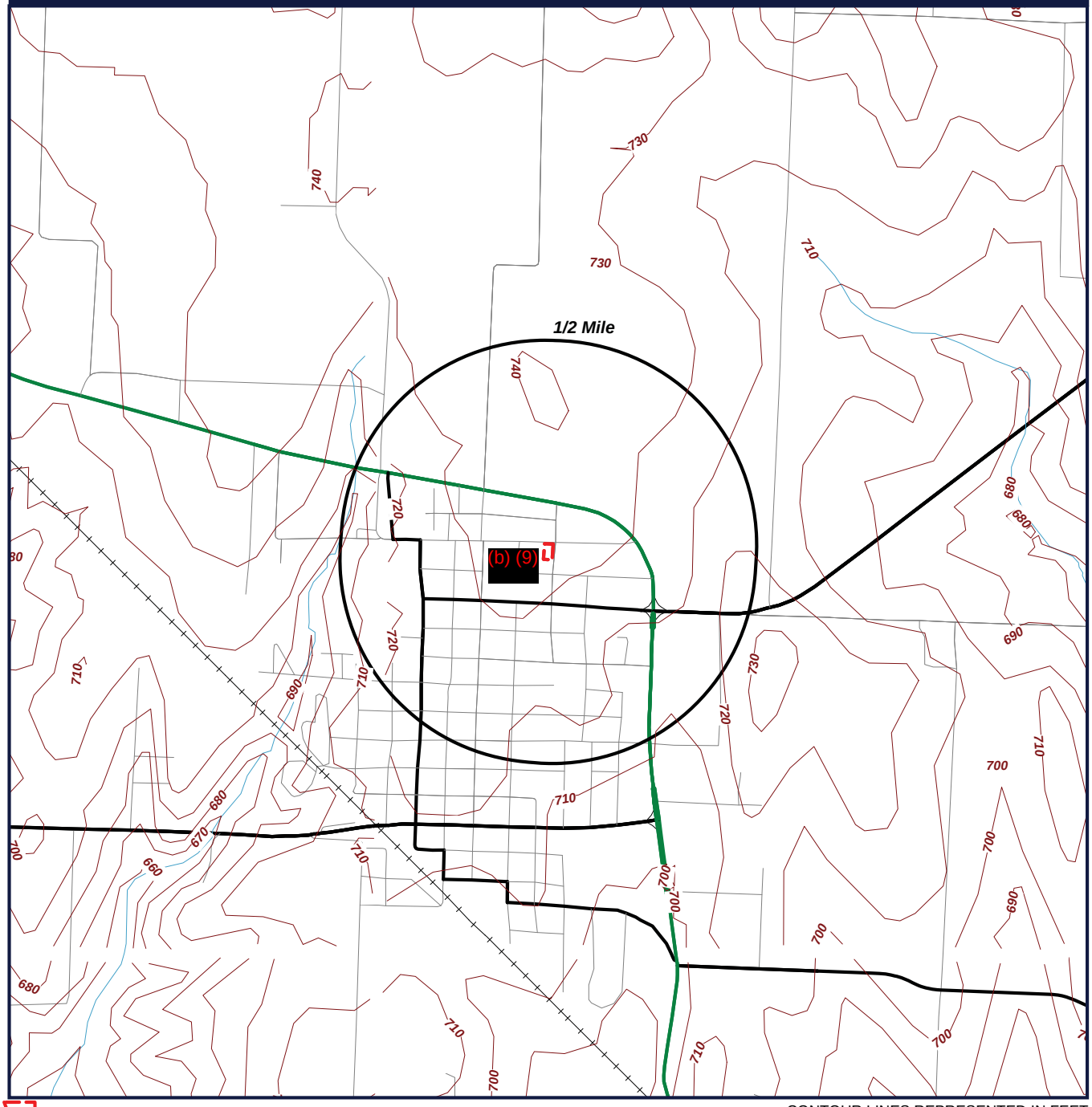
Photograph 13: View inside the shop building of equipment, parts, and new and used oil containers and drums.

Photograph 14: View looking northwest of the rainbow hydrocarbon sheen visible on the concrete driveway near the shop building.

Photograph 15: View inside the shop building showing the leftover transformer from the salvage business. Note the blue "No PCB" sticker on the transformer. This area is where the furnace used for burning the insulation from the transformer was located.

Photograph 16: View looking southwest of the north side of the shop building showing some of the scattered areas of debris and parts.

# WATER WELL MAP




Target Property (TP)

TWDB

**Two Lots with Improvements**
**905 N. Poplar**
**Leonard, Texas**
**75452**

CONTOUR LINES REPRESENTED IN FEET

N
W E
S

0' 1000' 2000' 3000'

SCALE: 1" = 2000'

GeoSearch 2705 Bee Caves Rd, Suite 330 - Austin, Texas 78746 - phone: 866-396-0042 - fax: 512-472-9967

JOB #: 11793 - 11/9/2009

Figure 2C-1

# REPORT SUMMARY OF LOCATABLE SITES

| MAP ID# | DATABASE NAME | SITE ID# | DISTANCE FROM SITE | SITE NAME | ADDRESS | CITY, ZIP CODE | PAGE # |
|---|---|---|---|---|---|---|---|
| 1 | TWDB | 18-39-701 | 0.090 SW | CITY OF LEONARD | | | 1 |

GeoSearch 2705 Bee Caves Rd, Suite 330 · Austin, Texas 78746 · phone: 888-396-0042 · fax: 512-472-9967

Figure 2C-2

page) summarizing the information provided in Attachment 2A. Include in this summary sufficient information to verify that the affected property meets or does not meet the exclusion criteria. Also include in this attachment photographs and correspondence with wildlife management agencies used to complete the checklist. Include a topographic map and/or aerial photo to depict the affected property and surrounding area.

| |
|---|
| Not enough information is available to complete this section. |

## Attachment 2A. Tier 1 Exclusion Criteria Checklist

### PART I. Affected Property Identification and Background Information

1) Provide a description of the specific area of the response action and the nature of the release. Include estimated acreage of the affected property and the facility property, and a description of the type of facility and/or operation associated with the affected property. Also describe the location of the affected property with respect to the facility property boundaries and public roadways.

Attach available USGS topographic maps and/or aerial or other affected property photographs to this form to depict the affected property and surrounding area. Indicate attachments:
_____ Topo map _____ Aerial photo _____ Other (specify) _____

2) Identify environmental media known or suspected to contain chemicals of concern (COCs) at the present time. Check all that apply:

| Known/Suspected COC Location | Based on sampling data? | |
|---|---|---|
| ____ Soil <5 ft below ground surface | _____ Yes | _____ No |
| ____ Soil >5 ft below ground surface | _____ Yes | _____ No |
| ____ Groundwater | _____ Yes | _____ No |
| ____ Surface Water/Sediments | _____ Yes | _____ No |

Explain (previously submitted information may be referenced):

3) Provide the information below for the nearest surface water body which has become or has the potential to become impacted from migrating COCs via surface water runoff, air deposition, groundwater seepage, etc. Exclude wastewater treatment facilities and stormwater conveyances/impoundments authorized by permit. Also exclude conveyances, decorative ponds, and those portions of process facilities that are:

a. Not in contact with surface waters in the State or other surface waters which are ultimately in contact with surface waters in the State; <u>and</u>
b. Not consistently or routinely utilized as valuable habitat for natural communities including birds, mammals, reptiles, etc.

The nearest surface water body is _____ feet/miles from the affected property and is named:

_____

The water body is best described as a:
____ freshwater stream:
  ____ perennial (has water all year)
  ____ intermittent (dries up completely for at least 1 week a year)
  ____ intermittent with perennial pools
____ freshwater swamp/marsh/wetland
____ saltwater or brackish marsh/swamp/wetland
____ reservoir, lake, or pond; approximate surface acres _____
____ drainage ditch
____ tidal stream ____ bay ____ estuary
____ other; specify

Is the water body listed as a State classified segment in Appendix C of the current Texas Surface Water Quality Standards; §§307.1 - 307.10?

_____ Yes Segment # _____ Use Classification: _____

_____ No

If the water body is not a State classified segment, identify the first downstream classified segment.

Name: _____

Segment #: _____

Use Classification: _____

As necessary, provide further description of surface waters in the vicinity of the affected property:

| |
|---|
| |

## PART II. Exclusion Criteria and Supportive Information

### Subpart A. Surface Water/Sediment Exposure

1) Regarding the affected property where a response action is being pursued under the TRRP, have COCs migrated and resulted in a release or imminent threat of release to either surface waters or to their associated sediments via surface water runoff, air deposition, groundwater seepage, etc.? Exclude wastewater treatment facilities and stormwater conveyances/impoundments authorized by permit. Also exclude conveyances, decorative ponds, and those portions of process facilities which are:

a. Not in contact with surface waters in the State or other surface waters which are ultimately in contact with surface waters in the State; and

b. Not consistently or routinely utilized as valuable habitat for natural communities including birds, mammals, reptiles, etc.

_____ Yes _____ No

Explain:

| |
|---|
| |

If the answer is yes to Subpart A above, the affected property does not meet the exclusion criteria. However, complete the remainder of Part II to determine if there is a complete and/or significant soil exposure pathway, then complete PART III - Qualitative Summary and Certification. If the answer is No, go to Subpart B.

**Subpart B. Affected Property Setting**

In answering "Yes" to the following question, it is understood that the affected property is not attractive to wildlife or livestock, including threatened or endangered species (i.e., the affected property does not serve as valuable habitat, foraging area, or refuge for ecological communities). (May require consultation with wildlife management agencies.)

1) Is the affected property wholly contained within contiguous land characterized by: pavement, buildings, landscaped area, functioning cap, roadways, equipment storage area, manufacturing or process area, other surface cover or structure, or otherwise disturbed ground?

____ Yes ____ No

Explain:

If the answer to Subpart B above is Yes, the affected property meets the exclusion criteria, assuming the answer to Subpart A was No. Skip Subparts C and D and complete PART III - Qualitative Summary and Certification. If the answer to Subpart B above is No, go to Subpart C.

**Subpart C. Soil Exposure**

1) Are COCs which are in the soil of the affected property solely below the first 5 feet beneath ground surface **or** does the affected property have a physical barrier present to prevent exposure of receptors to COCs in surface soil?

____ Yes ____ No

Explain:

If the answer to Subpart C above is Yes, the affected property meets the exclusion criteria, assuming the answer to Subpart A was No. Skip Subpart D and complete PART III - Qualitative Summary and Certification. If the answer to Subpart C above is No, proceed to Subpart D.

**Subpart D. *De Minimus* Land Area**

In answering "Yes" to the question below, it is understood that all of the following conditions apply:

- The affected property is not known to serve as habitat, foraging area, or refuge to threatened/endangered or otherwise protected species. (Will likely require consultation with wildlife management agencies.)
- Similar but unimpacted habitat exists within a half-mile radius.
- The affected property is not known to be located within one-quarter mile of sensitive environmental areas (e.g., rookeries, wildlife management areas, preserves). (Will likely require consultation with wildlife management agencies.)
- There is no reason to suspect that the COCs associated with the affected property will migrate such that the affected property will become larger than one acre.

1) Using human health protective concentration levels as a basis to determine the extent of the COCs, does the affected property consist of one acre or less and does it meet all of the conditions above?

____ Yes ____ No

Explain how conditions are met/not met:

| |
|---|
| |

If the answer to Subpart D above is Yes, then no further ecological evaluation is needed at this affected property, assuming the answer to Subpart A was No. Complete PART III - Qualitative Summary and Certification. If the answer to Subpart D above is No, proceed to Tier 2 or 3 or comparable ERA.

## PART III. Qualitative Summary and Certification (complete in all cases.)

Attach a brief statement (not to exceed 1 page) summarizing the information you have provided in this form. This summary should include sufficient information to verify that the affected property meets or does not meet the exclusion criteria. The person should make the initial decision regarding the need for further ecological evaluation (i.e., Tier 2 or 3) based upon the results of this checklist. After review, TCEQ will make a final determination on the need for further assessment. **Note that the person has the continuing obligation to re-enter the ERA process if changing circumstances result in the affected property not meeting the Tier 1 exclusion criteria.**

Completed by _____ (Typed/Printed Name)

_____ (Title)

_____ (Date)

I believe that the information submitted is true, accurate, and complete, to the best of my knowledge.

_____ (Typed/Printed Name of Person)

_____ (Title of Person)

_____ (Signature of Person)

_____ (Date Signed)

# Section 3 Assessment Strategy

Use this section to discuss the rationale for the assessment and identify remaining data gaps.

## *Section 3.1 General Assessment Issues*

### Environmental Media Assessed

All information provided in this APAR are based on the sampling performed by EPA and TCEQ in the 1990s and on site reconnaissance conducted by Mr. Charles R. Robertson of Terra-Solve, Inc., on November 20, 2009, as part of a Phase I Environmental Site Assessment.

Only soil samples were collected during the 1990s assessment conducted by EPA and TCEQ. As mentioned previously, the complete reports of these activities has been lost and are not available from EPA or TCEQ files. No groundwater assessment has been performed.

### Target COCs

As outlined in a meeting with EPA, TCEQ, Terra-Solve, the attorney representing Leonard ISD, and the owner, the following chemicals of concern (COCs) were identified that exceed the current (November 2014) TCEQ Tier I Residential 0.5-acre source area PCLs:

- Polychlorinatedbiphenyls (PCBs);
- Hexachlorobenzene (HCB); and
- Copper.

Also in the meeting it was noted that TCEQ also will require samples to assess impacts to sediment and groundwater. A copy of the letter summarizing the meeting is attached. The TCEQ response letter dated June 18, 2010, outlining the additional requirements is also attached.

### Background

Three background metals samples were collected from unaffected areas, upgradient and upwind from the site. The results are given in Table 4D.

## *Section 3.2 Assessment Strategy*

### General Assessment Approach

No information is available on the sampling methods, etc. used by EPA and TCEQ, however, TCEQ has agreed that the sample results obtained from the EPA and TCEQ files are acceptable for use in evaluating the site conditions. Refer to the above-mentioned letter summarizing the meeting with all parties.

### Assessment Methods

No information is available on the sampling methods, etc. used by EPA and TCEQ, however, TCEQ has agreed that the sample results obtained from the EPA and TCEQ files are acceptable for use in evaluating the site conditions. Refer to the above-mentioned letter summarizing the meeting with all parties.

### *Table 3A - Underground Utilities*

No assessment of underground utilities has been performed. No sanitary sewer service to the site exists, but it is available from the City of Leonard. Potable water to the site is provided by the City of Leonard. Electricity to the site is provided by Texas New Mexico Power Company. Natural gas service to the site is provided by Atmos Energy.

**Table 3A. Underground Utilities**

| Utility type | Construction material | Backfill material | Approx. depth (ft) | Utility company name | Potential migration pathway? | | Affected? | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Yes | No | Yes | No |
| Water | Unknown | Unknown | ? | City of Leonard | X | | Unknown | |
| Electricity | Unknown | Unknown | ? | Texas New Mexico Power Company | | X | Unknown | |
| Natural Gas | Unknown | Unknown | ? | Atmos Energy | X | | Unknown | |

# Section 4 Soil Assessment

Use this section to discuss the results of the surface and subsurface soil assessment and the nature and extent of NAPL and COCs in soil. For this discussion, the term soil includes the vadose zones, capillary fringe, and saturated zones that are not groundwater-bearing units. Refer to *Affected Property Assessment Requirements* (RG-366/TRRP-12) for guidance on assessment levels and *NAPL Assessment* (RG-366/TRRP-12A) for information on determining the nature and extent of NAPL.

## Section 4.1 Derivation of Assessment Levels

The proposed use of the site as a parking lot for the Leonard ISD constitutes a residential use. The surrounding properties with in a 500-foot radius of the site are residential use, therefore the proposed assessment level is the TCEQ November 2014 Tier I Residential 0.5-acre source PCLs.

## Section 4.2 Nature and Extent of COCs and NAPL in Soil

The previous soil samples collected by EPA and TCEQ in the early 1990s identified PCBs, copper, and hexachlorobenzene in excess of the current Tier I Residential 0.5-acre source area PCLs. These levels were identified on the site, on the residential vacant lot to the west, in the alley, and on residential properties to the south of the site.

A groundwater assessment has not been performed.

***Table 4A - Surface Soil Residential Assessment Levels with no Ecological Component***

Use this table to summarize the residential assessment level for each COC analyzed in surface soils in areas where human health PCLs apply and to compare the residential assessment level to the higher of the maximum COC concentration or the maximum SQL to determine if the residential assessment level has been exceeded. For each COC, highlight the value that is the residential assessment level and highlight the maximum concentration if it exceeds the residential assessment level. Add columns as necessary to include applicable exposure pathways. If a Tier 2 or Tier 3 $^{GW}$Soil PCL was used as the residential assessment level, include supporting documentation in Appendix 9.

**Table 4A. Surface Soil Residential Assessment Levels for Human Health Exposure Pathways**

| COC | Source area size (acres) | $^{Tot}Soil_{Comb}$ PCL (mg/kg) | $^{GW}$Soil PCL | | MQL (mg/kg) | Back-ground (mg/kg) | Maximum concentration | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (mg/kg) | Tier | | | Sample ID | Sample depth | Sample date | Conc (mg/kg) |
| PCBs (On Site) | 0.344 | 1.1 | 11 | I | | NA | SO-18, N. of ASTs | 0.5'-1.0' | 1990s | 2,300 |
| PCBs (Off Site) | 0.344 | 1.1 | 11 | I | | NA | SO-14, alley adj. to transformer storage area | 0.5'-1.0' | 1990s | 4,100 |
| HCB (On Site) | 0.344 | 1.1 | 1.1 | I | | NA | SO-18, N. of ASTs | 0.5-1.0' | 1990s | 15,000 |
| HCB (Off Site) | 0.344 | 1.1 | 1.1 | I | | NA | NA | NA | NA | NA |
| Cu (On Site) | 0.344 | 1,300 | 1,000 | I | | NA | SO-17, transformer off-load area | 0.5-1.0' | 1990s | 279 |
| Cu (Off Site) | 0.344 | 1,300 | 1,000 | I | | NA | SO-14, alley s. of site | 0.5-1.0' | 1990s | 1,860 |
| PCBs (Drainage Ditch) | 0.344 | 1.1 | 11 | I | | NA | SO-9, (drainage ditch NWC Poplar and Hackberry Streets) | Grab | 1990s | 3.00 |
| Cu (Drainage Ditch) | 0.344 | 1,300 | 1,000 | I | | NA | SO-9, (drainage ditch NWC Poplar and Hackberry Streets) | Grab, | 1990s | 105 |
| Cu (upgradient) | NA | 1,300 | 1,000 | | | 11.6 | SO-1, Unaffected area | | 1990s | NA |
| Cu (upgradient) | NA | 1,300 | 1,000 | | | 20.6 | SO-2, Unaffected area | | 1990s | NA |
| Cu (upgradient) | NA | 1,300 | 1,000 | | | 20.0 | SO-3, Unaffected area | | 1990s | NA |
| | | | | | | | | | | |
| | | | | | | | | | | |

***Table 4B - Surface Soil Residential Assessment Levels with Ecological Component***

Use this table to summarize the residential assessment level for each COC analyzed in surface soils in areas where human health and ecological concerns apply and to compare the residential assessment level to the maximum COC concentration to determine if the residential assessment level has been exceeded. If a PCL has not been developed under an ecological risk assessment, provide the basis for the value used. Complete this table for each COC analyzed. For each COC, highlight the value that is the residential assessment level and highlight the maximum concentration if it exceeds the assessment level.

**Table 4B. Surface Soil Residential Assessment Levels with Ecological Component**

| COC | Human health PCL[1] (mg/kg) | Ecological PCL (0 to 0.5 ft) | | Ecological PCL (0.5 to 5 ft) | | MQL (mg/kg) | Back-ground (mg/kg) | Maximum concentration in areas of ecological concern | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (mg/kg) | Basis[2] | (mg/kg) | Basis[2] | | | Sample ID | Sample depth | Sample date | Conc (mg/kg) |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

[1] List the lower of ${}^{Tot}Soil_{Comb}$ and ${}^{GW}Soil$ values from Table 4A.

[2] Specify the basis of the ecological PCL (benchmark, MQL, background, Tier 2 PCL, or Tier 3 PCL).

**TABLE 4D: SOIL DATA SUMMARY**

**Samples Collected on 07/12/95 (R, A, D, F); 01/13-14/98 (SO)**

| Sample | Sample Interval | Description | PCBs | VOCs | SVOCs | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R01 | 6” | (b) (6) [redacted] 14’ N & 3.5’ E of House | **27.9** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R02 | 6” | (b) (6) [redacted] 14’ N of House, 22’ W of R01 | **3.75** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R03 | 6” | (b) (6) [redacted] 14’ N of House, 22’ W of R02 | **4.07** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R04 | 6” | (b) (6) [redacted] 7’ N &3.5’ E of House | **3.62** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R05 | 6” | (b) (6) [redacted] 7’ N of House, 22’ W of R04 | **1.12** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R06 | 6” | (b) (6) [redacted] 7’ N of House, 22’ W of R05 | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R07 | 6” | Doyle Residence, 7’ W Of Facility, 19’ N of E Garage | **10.40** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | 2.19/ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R08 | 6” | Doyle Residence, 7’ W Of Facility, 43’ N of E Garage | **6.97** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R09 | 6” | Doyle Residence, 24’ W Of Facility, 31’ N of E Garage | **2.00** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R10 | 6” | (b) (6) [redacted] 25’ E House, 7’ S N End House | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R11 | 6” | (b) (6) [redacted] 20’ E of R01, 20’ N of R10 | **13.60** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TRRP Tier 1 PCLs** | | | | | **Various** | **5.0** | **440** | **1.5** | **2,400** | **3.0** | **0.0078** | **2.3** | **0.48** |

Results listed in mg/kg (parts per million; ppm) with reporting limits shown on the laboratory reports.

[1] Defined by TRRP Table 1, Residential Soils, June 2012 tables. TPH levels are Residential screening levels.

[2] No lab reports are available from the EPA and TCEQ files, therefore the detection limits cannot be stated.

BRL: Below Reporting Limits. ---: Not Analyzed for this compound. N/A: Not Applicable. **Boldface denotes a concentration greater than TRRP Tier 1 PCLs.**

**TABLE 4D: SOIL DATA SUMMARY:**

| Sample | Sample Interval | Description | PCBs | VOCs | SVOCs | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A01 | 6” | Alley, 12.K’ W of Facility East Fence | **5.70** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | **74.60** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 18” | | **48.20** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 24” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A02 | 6” | Alley, 25’ W of A01 | **1.57** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | **852.00** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 18” | | **22.00** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 24” | | **115.00 / 32.60** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A03 | 6” | Alley, 25’ W of A02 | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | **59.00** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 18” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 24” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A04 | 6” | Alley, 25’ W of A03 | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | **8.54** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 18” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 24” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A05 | 6” | Alley, 25’ W of A04 | **2.31** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 18” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 24” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A06 | 6” | Alley, 25’ W of A05 | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | **7.35** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 18” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 24” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TRRP Tier 1 PCLs** | | | | | **Various** | **5.0** | **440** | **1.5** | **2,400** | **3.0** | **0.0078** | **2.3** | **0.48** |

Results listed in mg/kg (parts per million; ppm) with reporting limits shown on the laboratory reports.

[1] Defined by TRRP Table 1, Residential Soils, June 2012 tables. TPH levels are Residential screening levels.

[2] No lab reports are available from the EPA and TCEQ files, therefore the detection limits cannot be stated.

BRL: Below Reporting Limits. ---: Not Analyzed for this compound. N/A: Not Applicable. **Boldface denotes a concentration greater than TRRP Tier 1 PCLs.**

**TABLE 4D: SOIL DATA SUMMARY:**

| Sample | Sample Interval | Description | PCBs | VOCs | SVOCs | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D01 | 6” | Day Care, 2’ S of N Fence 9’ W of E Fence | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| D02 | 6” | Day Care, 2’ S of N Fence 29’ W of E Fence | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| D03 | 6” | Day Care, 2’ S of N Fence 49’ W of E Fence | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| D04 | 6” | Day Care, 15’ S of N Fence 9’ W of E Fence | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| D05 | 6” | Day Care, 15’ S of N Fence 29’ W of E Fence | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| D06 | 6” | Day Care, 15’ S of N Fence 49’ W of E Fence | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| F01 | 6” | Outside Facility, 6’ E of E Fence, 15’ N of S Fence | **2.98** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 12” | | **14.00** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 18” | | **4.81** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 24” | | ND | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TRRP Tier 1 PCLs** | | | | | **Various** | **5.0** | **440** | **1.5** | **2,400** | **3.0** | **0.0078** | **2.3** | **0.48** |

Results listed in mg/kg (parts per million; ppm) with reporting limits shown on the laboratory reports.

[1] Defined by TRRP Table 1, Residential Soils, June 2012 tables. TPH levels are Residential screening levels.

[2] No lab reports are available from the EPA and TCEQ files, therefore the detection limits cannot be stated.

BRL: Below Reporting Limits. ---: Not Analyzed for this compound. N/A: Not Applicable. **Boldface denotes a concentration greater than TRRP Tier 1 PCLs.**

**TABLE 4D: SOIL DATA SUMMARY:**

| Sample | Sample Interval | Description | PCBs | Hexa-Clhloro-benzne | VOCs | | SVOCs | Cadmium | Copper | Lead | Cyanide | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SO-01 | | BACKGROUND | ND | | | | | ND | 11.6 | | | | |
| SO-02 | | BACKGROUND | 0.033 | | | | | 0.41 | 20.6 | | | | |
| SO-03 | | BACKGROUND | 0.340 | | | | | ND | 20.0 | | | | |
| SO-04 | | N of HIGH SCHOOL | | | | | | | | | | | |
| SO-05 | | W of HIGH SCHOOL | | | | | | | | | | | |
| SO-06 | | S of HIGH SCHOOL | | | | | | | | | | | |
| SO-07 | | HACKBERRY ST DITCH | | | | | | 0.45 | 98.4 | 30.6 | 0.22 | | |
| SO-08 | | POPLAR ST DITCH | | | | | | 0.75 | 42.7 | 107 | 0.33 | | |
| SO-09 | | CULVERT AT HACKBERRY ST | | | | | | 0.42 | 105 | 59.7 | 0.35 | | |
| SO-10 | | DUPLICATE of SO-09 | | | | | | 0.48 | 115 | 62.2 | 0.80 | | |
| SO-11 | | (b) (6) [redacted] | | | | | | 1.1 | 1,580 | 73.5 | 0.22 | | |
| SO-12 | | DAY CARE YARD | | | | | | | | | | | |
| SO-13 | | ALLEY W. LOCATION | | | | | | 0.85 | 1,760 | 76.5 | 0.23 | | |
| SO-14 | | ALLEY E. LOCATION | | | | | | 0.77 | 1,860 | 70.0 | 0.29 | | |
| SO-15 | | SO-14 DUPLICATE | | | | | | 1.3 | 1,390 | 57.6 | 0.25 | | |
| SO-16 | | DOYLE YARD | | | | | | 0.39 | 1,100 | 35.2 | 0.18 | | |
| SO-17 | | SITE OFF-LOAD AREA | 0.160 | ND | | | | | 279 | | | | |
| SO-18 | | SITE CONTAINER STORAGE | **1,400** | 15 | | | | | 204 | | | | |
| SO-19 | | SITE TRANSFORM. STORAGE | **1.70** | ND | | | | | 30.9 | | | | |
| **TRRP Tier 1 PCLs** | | | | | **Various** | **5.0** | **440** | **1.5** | **2,400** | **3.0** | **0.0078** | **2.3** | **0.48** |

Results listed in mg/kg (parts per million; ppm) with reporting limits shown on the laboratory reports.

[1] Defined by TRRP Table 1, Residential Soils, June 2012 tables. TPH levels are Residential screening levels.

[2] No lab reports are available from the EPA and TCEQ files, therefore the detection limits cannot be stated.

BRL: Below Reporting Limits. ---: Not Analyzed for this compound. N/A: Not Applicable. **Boldface denotes a concentration greater than TRRP Tier 1 PCLs.**

***Table 4C - Subsurface Soil Residential Assessment Levels***

The purpose of this table is to illustrate the residential assessment levels for each COC analyzed in subsurface soils and to compare the residential assessment level to the maximum COC concentration to determine if the residential assessment level has been exceeded. Complete this table for each target COC**.** Highlight the value that is the residential assessment level for each COC and highlight the maximum concentration if it exceeds the assessment level. Add columns as necessary to include other applicable exposure pathways. If a Tier 2 or Tier 3 $^{GW}$Soil PCL was used as the residential assessment level, include supporting documentation in Appendix 9.

| |
|---|
| No residential subsurface (greater than15 feet below ground surface), assessment has been performed. |

**Table 4C. Subsurface Soil Residential Assessment Levels**

| COC | Source area size (acres) | $^{Air}Soil_{Inh-V}$ PCL (mg/kg) | $^{GW}$Soil PCL | | MQL | Back-ground | Maximum concentration | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (mg/kg) | Tier | (mg/kg) | (mg/kg) | Sample ID | Sample depth | Sample date | Conc (mg/kg) |
| | | | | | | | | | | |
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***Table 4D - Soil Data Summary***

A summary of the soil data from the previous EPA and TCEQ assessments is included.

***Table 4E - Soil Geochemical/Geotechnical Data Summary***
Provide summary tables of geochemical or geotechnical analyses results. Include in the tables the sample ID number, boring number, sample date, sample depth, parameter analyzed, analytical method, and analytical result. Include data qualifiers and identify the data qualifiers. Report non-detected results as less than the SQL, where applicable.

| |
|---|
| NA |

***Figure 4A - Surface Soil COC Concentration Maps***

The two maps included were constructed using the EPA and TCEQ data.

***Figure 4B - Subsurface Soil COC Concentration Maps***

| |
|---|
| No residential subsurface (greater than15 feet below ground surface), assessment has been performed. |

***Figure 4C - Cross Sections***

| |
|---|
| No information is available from the previous assessments performed by the EPA and TCEQ. |

# Section 5 Groundwater Assessment

No groundwater assessment has been performed.

## *Section 5.1 Derivation of Assessment Levels*

No groundwater assessment has been performed.

## *Section 5.2 Nature and Extent of COCs and NAPL in Groundwater*

No groundwater assessment has been performed.

***Table 5A - Groundwater Residential Assessment Levels***

| |
|---|
| No groundwater assessment has been performed. |

**Table 5A. Groundwater Residential Assessment Levels**

| COC | $^{GW}GW_{Ing}$ or $^{GW}GW_{Class3}$ (mg/L) | $^{Air}GW_{Inh-V}$ | | $^{SW}GW^{1}$ (mg/L) | $^{Sed}GW^{1}$ (mg/L) | MQL (mg/L) | Back-ground (mg/L) | Maximum concentration | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (mg/L) | Source area size (acres) | | | | | Sample ID | Sample depth (ft) | Sample date | Conc (mg/L) |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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***Table 5B - Groundwater Data Summary***

| |
|---|
| No groundwater assessment has been performed. |

***Table 5C - Groundwater Geochemical Data Summary***

| |
|---|
| No groundwater assessment has been performed. |

***Table 5D - Groundwater Measurements***

| |
|---|
| No groundwater assessment has been performed. |

***Figure 5A - Groundwater Gradient Map***

| |
|---|
| No groundwater assessment has been performed. |

***Figure 5B - Groundwater COC Concentration Maps***

| |
|---|
| No groundwater assessment has been performed. |

***Figure 5C - Groundwater Geochemistry Maps***

| |
|---|
| No groundwater assessment has been performed. |

***Figure 5D - Cross Section Groundwater-to-Surface Water Pathway***

| |
|---|
| No groundwater assessment has been performed. |

.

[1] PCLs for these pathways are not applicable to all sites. Refer to *Determining PCLs for Surface Water and Sediment* (RG-366/TRRP-24) to determine when to calculate a PCL for this pathway.

# Section 6 Surface Water Assessment and Critical PCL Development

No surface water assessment has been performed.

## *Section 6.1 Type of Surface Water and Applicable Water Quality Criteria*

No surface water assessment has been performed.

## *Section 6.2 Surface Water Risk-Based Exposure Levels (RBELs) for Human Health and Aquatic Life Protection*

No surface water assessment has been performed.

## *Section 6.3 Nature and Extent of COCs in Surface Water*

No surface water assessment has been performed.

## *Section 6.4 Critical PCL for Surface Water*

No surface water assessment has been performed.

***Table 6A - Surface Water Critical PCLs***

| |
|---|
| No surface water assessment has been performed. |

**Table 6A. Surface Water Critical PCLs**

| COC | Background (mg/L) | MQL (mg/L) | Human Health[1] ($^{SW}SW_{HH}$) | | | | Aquatic Life and Ecological[2] ($^{SW}SW_{eco}$) | | | $^{SW}SW$ petroleum fuel discharges[3] (mg/L) | Conc (mg/L) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Contact recreation | | | | | | Max | Rep[4] |
| | | | Water and fish (mg/L) | Fish only (mg/L) | Incidental ingestion (mg/L) | Dermal contact (mg/L) | Acute (mg/L) | Chronic (mg/L) | Wildlife receptors (mg/L) | | | |
| | | | | | | | | | | | | |
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[1] $^{SW}SW_{HH}$ – Surface water PCL protective of human health.
[2] $^{SW}SW_{eco}$ – Surface water PCL protective of aquatic life and wildlife ecological receptors. If a PCL was not developed under an ecological risk assessment, provide the value used (benchmark, MQL, background, or human health PCL), as appropriate.
[3] $^{SW}SW$ – Surface water PCL for discharge of petroleum fuel contaminated water. See Section 3.4 of *Determining PCLs for Surface Water and Sediment* (RG-366/TRRP-24).
[4] Document the development of representative concentrations in Appendix 8.

***Table 6B - Surface Water Data Summary***

| |
|---|
| No surface water assessment has been performed. |

***Figure 6A - Surface Water PCLE Zone Map***

| |
|---|
| No surface water assessment has been performed. |

***Figure 6B - Photographs***

| |
|---|
| No surface water assessment has been performed. |

# Section 7 Sediment Assessment and Critical PCL Development

Complete this section for sediment threatened, affected, and/or sampled, or if the groundwater-to-sediment pathway is complete or reasonably anticipated to be complete. The purpose of this section is to describe and provide sufficient documentation to support the sediment RBELs for human health and the critical PCLs for sediment based on human and ecological receptors. Refer to *Determining PCLs for Surface Water and Sediment* (RG-366/TRRP-24) for guidance.

## *Section 7.1 Type of Sediment and Applicable Criteria*

| |
|---|
| No sediment assessment has been performed. |

## *Section 7.2 Sediment Risk-based Exposure Levels (RBELs) for Human Health*

| |
|---|
| No sediment assessment has been performed. |

## *Section 7.3 Nature and Extent of COCs in Sediment*

| |
|---|
| No sediment assessment has been performed. |

## *Section 7.4 Critical PCL for Sediment*

| |
|---|
| No sediment assessment has been performed. |

# Section 8 Air Assessment and Critical PCL Development

## *Section 8.1 Risk-Based Exposure Levels*

| |
|---|
| No air assessment has been performed. |

## *Section 8.2 Nature and Extent of COCs in Air*

| |
|---|
| No air assessment has been performed. |

***Table 8A - Outdoor Air Data Summary***

| |
|---|
| No air assessment has been performed. |

# Section 9 Ecological Risk Assessment

| |
|---|
| No ecological assessment has been performed. |

## *Reasoned Justification*

| |
|---|
| No ecological assessment has been performed. |

## *Expedited Stream Evaluation*

| |
|---|
| No ecological assessment has been performed. |

## *Tier 2 Screening Level Ecological Risk Assessment (SLERA)*

| |
|---|
| No ecological assessment has been performed. |

.

## *Tier 3 Site-Specific Ecological Risk Assessment (SSERA)*

| |
|---|
| No ecological assessment has been performed. |

## *Proposal for Ecological Services Analysis*

| |
|---|
| No ecological assessment has been performed. |

# Section 10 COC Screening

NA

## *Section 10.1 Frequency of Detection*

NA.

## *Section 10.2 Lab Contaminant or Blank Contaminant*

NA.

## *Section 10.3 COC Not Sourced On-Site*

NA.

## *Section 10.4 Appropriate Sample Quantitation Limits*

NA.

## *Section 10.5 Screened COCs Expected to be Present Dropped from Future Sampling*

NA.

*Table 10A - COC Screening Summary Table*

NA.

**Table 10A. COC Screening Summary Table (NA)**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | SQL Justifications | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 9 | 10 |
| COC | All detected concentrations and SQLs < residential assessment level in all sampled media §350.71(k)(1) | COC not detected in any sample in the medium §350.71(k)(3) | Frequency of detects <5% of the ≥20 samples in this medium[1] §350.71(k)(2)(A)(i) through (iii) | Common lab contaminant[2] §350.71(k)(2)(B) | Blank contaminant[2] §350.71(k)(2)(C) | Max conc < background §350.71(k)(2)(D) | COC not sourced on-site[3] §350.71(k)(2)(E) | All SQLs < RAL §350.71(k)(3)(A) | SQL > RAL but justified[4] §350.71(k)(3)(B) |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

[1] Provide in the text justification that a critical PCL is not warranted based on the criteria specified in §350.71(k)(2)(A)(iii).
[2] Provide in the text justification that the COC is not anticipated to be present at the site (see §350.71(k)(2)(B) or (C)).
[3] Provide in the text justification that the COC is not from an on-site source (see §350.71(k)(2)(E)).
[4] Provide in the text justification that all requirements of §350.71(k)(3)(B) are met.

# Section 11 Soil Critical PCL Development

NA. Using Tier I Residential, 0.5-acre source PCLs.

## *Section 11.1 Tier 2 or 3 PCL Development and Non-Default Parameters*

**Tier 2 and 3 Development**
NA.

**Non-Default Affected Property Parameters**
NA.

## *Section 11.2 Soil PCL Adjustments*

NA.

## *Section 11.3 Soil Critical PCLs*

NA.

# Section 12 Groundwater Critical PCL Development

NA, no groundwater assessment has been performed.

## *Section 12.1 Tier 2 or 3 PCL Development and Non-Default Parameters*

**Tier 2 and 3 Development**
NA.

**Non-Default Affected Property Parameters**
NA.

**Groundwater to Surface Water Dilution Factors**
NA.

## *Section 12.2 Groundwater PCL Adjustments*

NA.

## *Section 12.3 Groundwater Critical PCLs*

NA.

# Section 13 Notifications

The purpose of this section is to describe the notifications that have been completed or will be completed under §350.55. Refer to *Notification Requirements* (RG-366/TRRP-17) for guidance on the conditions that require notice.

## *Section 13.1 Notification of Actual or Probable Exposure*

Unknown if notifications have been made by EPA or TCEQ, based on their previous investigations.

## *Section 13.2 Other Notifications*

Unknown.

***Table 13A - Notification Summary***

Use this table to identify the real properties for which notification is required. Assign each real property an ID that is then used on Figure 13A to distinguish property locations. In the Reason for Notification column, specify if notification was required for an actual or probable exposure or another situation that prompted notification. If actual or probable exposure necessitates the notification of tenants/lessees or other persons related to the property usage, provide a list of the persons, their mailing addresses, and telephone numbers with Table 13A and identify the property which with they are associated.

**Table 13A. Notification Summary**

| Property ID | Property owner name | Physical property address, city, zip | Property owner mailing address, city, state, zip | Property owner phone no. | Contact name, mailing address, city, state, zip (if different from owner) | Reason for notification |
|---|---|---|---|---|---|---|
| | | | | | | |
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***Figure 13A - Notification Map***

Include a large-scale map that illustrates the locations of the properties, including rights of way and easements, that require notification. Label each property with the property ID assigned in Table 13A. Illustrate the legal property boundary and the relevant affected property boundary as defined by the assessment levels. To eliminate this figure, this information may be presented in Figure 1A or 1B if the scale is appropriate.

# Appendices

**Appendix 1 Notifications (NA)**

Provide copies of notification to affected landowner(s) or other entities requiring notification. Document that the required notices have been completed by providing a notarized statement of such fact including the names and addresses of persons receiving direct notice, such as mail, personal contact, public meeting, fliers, etc. Refer to *Notification Requirements* (RG-366/TRRP-17) for guidance.

**Appendix 2 Boring Logs and Monitor Well Completion Details (NA)**

For each boring drilled or monitor well installed during the assessment, provide a soil boring log with monitor well completion details if applicable. Include in the boring log:

- elevation of ground surface referenced to mean sea level,
- soil description and classification,
- moisture content,
- depth at which groundwater was encountered while drilling,
- visual confirmation of NAPL, such as staining,
- identification of groundwater-bearing units and saturated zones,
- field-screening results and field-screening sample locations,
- sample locations submitted for laboratory analyses,
- depth markings,
- sample type (Shelby tube, split spoon, etc.),
- boring diameter,
- date drilled,
- name of the person who logged the well, and
- drilling method.

Include in the monitor well completion details:

- elevation of top and bottom of casing referenced to mean sea level,
- static water level and date measured (referenced from both depth below ground surface and mean sea level),
- screened interval and slot size,
- casing interval and diameter,
- sand pack grain size and interval,
- date(s) of installation,
- cement and grout interval.

If the assessment was conducted solely by excavation, indicate such and provide lithologic descriptions and the other information requested to the extent appropriate.

**Appendix 3 Monitor Well Development and Purging Data (NA)**

Submit monitor well development and purging data in a table or provide in photocopies of field notes that specify water quality stabilization parameters, turbidity measurements, water-level measurements while purging, flow rates, and the other parameters measured during well development and purging.

**Appendix 4 Registration and Institutional Controls(NA)**

Include in this appendix copies of the Industrial and Solid Waste Notice of Registration (NOR), MSD documentation (a copy of the ordinance, deed restriction, and a copy of the MSD certificate and a map that illustrates the boundary of the MSD and the affected property), and/or existing institutional controls restricting well installation or other uses of the property.

**Appendix 5 Water Well Records**

Include a copy of the State Well Report and companion documents (water quality analysis, undesirable water reports, etc) completed by the driller for each water well identified in the receptor surveys. Also include in this appendix other documentation on the water wells, including information from state agency databases and records, published reports (particularly those by the Texas Water Development Board and Bureau of Economic Geology), records from groundwater conservation districts or subsidence districts, and records from other entities with information on the water well(s). Document the presence or absence of water wells and the primary sources of information researched to come to this conclusion.

**Appendix 6 Monitor Well Records (NA)**

Provide a copy of the State Well Report completed by the driller for each installed monitor well. For information on completing State Well Reports, contact the Texas Department of Licensing and Regulation at 800-803-9202 or 512-463-6599 or http://www.tdlr.state.tx.us.

**Appendix 7 Aquifer Testing Data (NA)**

For the aquifer tests performed on each groundwater-bearing unit, provide a narrative description of the work performed and the conclusions drawn. Identify the monitor wells used and provide an analysis of the field data, governing equations, sample calculations, assumptions, limitations in the collection of data, and justification for choosing the test method based on the site conditions. Provide a table of field measurements and input parameters such as transmissivity, hydraulic conductivity, storage coefficient of the aquifer, optimum sustainable groundwater pumping rate, and groundwater capture zone/radius of influence. Also provide a graph of well plots showing time of drawdown/buildup (or recovery for a slug test). Refer to the appropriate figure(s) which illustrate the locations of wells utilized.

**Appendix 8 Statistics Data Tables and Calculations (NA)**

Use this appendix to document data and statistical calculations used to determine site-specific background or representative concentrations of COCs in the following situations:

1. for calculating the site-specific background value, used as the residential assessment level or the critical PCL, for direct comparison to the individual samples from the assessed environmental medium data, as provided in §350.51(l) and §350.79(1);
2. for calculating a representative concentration (the upper confidence limit (UCL)) from the sample data from the environmental medium within an exposure area for statistical comparison to the critical PCL, or an alternative statistical method which meets the performance criteria required in §350.79(2)(A); or
3. for statistically comparing the environmental medium data set within an exposure area to the site-specific background data set, meeting the performance criteria required in §350.79(2)(B).

When applicable, include a map of exposure areas and provide justification for the placement and size of the exposure areas. Provide full documentation of the statistical comparisons including, but not limited to, the name and description of the statistical method(s) used and a list of statistical parameters and assumptions. Provide tables that, at a minimum, contain the following for each media: COC or parameter type, concentration, sample depth or interval, total number of samples used in the statistical calculation, and the statistical value calculated. Non-detect analytical results should be assigned a proxy value in accordance with §350.51(n). Either provide a map illustrating the sample locations used in the statistical calculations, or reference the appropriate figure in this report in which those samples have been specifically denoted.

**Appendix 9 Development of Non-Default RBELs and PCLs (NA)**

Include in this appendix the equations, calculations, detailed explanations beyond that provided in other sections, justification, input parameters, results, and supporting documentation associated with the development of non-default RBELs and Tier 2 and 3 PCLs. Refer to *Tiered Development of Human Health PCLs* (RG-366/TRRP-22). Also include in this appendix the information on development of TPH PCLs (refer to *Development of Human Health PCLs for Total Petroleum Hydrocarbon Mixtures* (RG-366/TRRP-27). Be sure to clearly label the information to adequately identify the COC, the input parameters, the model used, and the tier under which the evaluation was conducted. Document the applicability of non-default input parameters with lab reports, calculations, maps, or other justification. If PCLs have been adjusted due to cumulative risk/hazard level, aesthetic concerns, residual soil saturation, or theoretical soil vapor calculations, complete the appropriate tables and discuss the logic and methods used to make the adjustments. Support non-default input parameters and development of Tier 2 and 3 PCLs with complete documentation and justification. Unsubstantiated information will be considered invalid. Exposure factors that cannot be varied are listed in §350.74. Include verification that the TCEQ Executive Director has approved a variance from default exposure factors.

For convenience, Tier 2 tables are provided in this appendix. Use the tables only as necessary. Repeat the tables as necessary to document PCL development for different media, and for differing PCLs on-site and off-site. If Tier 3 PCLs were calculated, develop tables to document the inputs. If a Tier 2 dilution factor was calculated, provide maps and cross sections, if not referenced elsewhere in the report, to illustrate the location and measurements for deriving the inputs.

# Appendix 9 Tables

## COC Chemical/Physical Parameters and Toxicity Factors

Use these two tables only when a parameter was changed from that listed in rule or guidance. If a parameter different from that listed in rule or guidance was not used, do not submit this table. Provide in this appendix the associated supporting documentation. See *Toxicity Factors and Chemical/Physical Parameters* (RG-36/TRRP-19) for more information.

Properties for many COCs are listed in the Chemical/Physical Properties table in the Tier 1 PCL tables available on the TRRP web page. Use this table to list ONLY those COCs that are not included in the rule or web page or those COCs for which the person changed the value from a Tier 1 default. Only complete the portions that apply to these particular COCs. Note that values for shaded columns may not be changed from values listed in the rule. Include the calculations in this appendix and document the sources of information for those properties changed in accordance with §350.73(e). Do not complete this table for those COCs where the properties are the same as those listed in Figure 30 TAC 350.73(e) or in the chemical/physical properties table available from http://www.tnrcc.state.tx.us/permitting/trrp.htm.

| COC | Physical state | Type | M.W. (g/mole) | H' ($cm^3$-$H_2O$/$cm^3$-air) | $LogK_{oc}$ | $LogK_d$ | $D_{air}$ ($cm^2$/s) | $D_{wat}$ ($cm^2$/s) | Solubility (mg/l) | Vapor pressure (mm Hg) | Log $K_{ow}$ | $Br_{Abg}$ (g soil/g D.W.) | $Br_{Bg}$ (g soil/g D.W.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| Physical state | s - solid at 20°C; l - liquid at 20°C; g - gaseous at 20°C; | $K_d$ | Soil-water partition coefficient ($cm^3$-$H_2O$/g-Soil) |
| Type | O: organic; I: inorganic; M: metal; OA: organic acid | $D_{air}$ | Diffusion coefficient in air ($cm^2$/s) |
| M.W. | Molecular weight (g/mole) | $D_{wat}$ | Diffusion coefficient in water ($cm^2$/s) |
| H' | Dimensionless Henry's Law Constant H' = H x 41.57 at 20°C ($cm^3$-$H_2O$/$cm^3$-air) | $K_{ow}$ | Octanol-water partition coefficient ($cm^3$-$H_2O$/$cm^3$-Octanol) |
| H | Henry's Law Constant (atm-$m^3$/mole) | $Br_{Abg}$ | Soil-to-above ground plant biotransfer factor (g soil/g plant tissue dry weight) |
| $K_{oc}$ | Soil organic carbon-water partition coefficient ($cm^3$-$H_2O$/g-Carbon) | $Br_{Bg}$ | Soil-to-below ground plant biotransfer factor (g soil/g plant tissue dry weight) |

List the COCs not included in the Toxicity Factors Table. Do not complete this table if the toxicity factors are the same as those in the Toxicity Factors Table as provided in the Tier 1 PCL tables at http://www.tnrcc.state.tx.us/permitting/trrp.htm. Note that the toxicity factors must be provided by the TCEQ before use.

Provide the date of the toxicity factors table used: _____

| *COC* | Reference concentration RfC[1] ($mg/m^3$) | Oral reference dose $RfD_o$ (mg/kg-day) | Dermal reference dose $RfD_d$ (mg/kg-day) | Dermal slope factor $SF_d$ (mg/kg day) | Oral slope factor $SF_o$ (mg/kg day) | Inhalation unit risk factor URF ($\mu g/m^3$) | Relative bioavailability factor RBAF (unitless) | Dermal absorption fraction ABS.d[2] (unitless) | Gastrointestinal absorption fraction $ABS_{GI}$ (unitless) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

[1] When no RfC or URF is available, use the most current TCEQ Chronic Remediation-Specific Effects Screening Level value as the RfC.

[2] It is not necessary to calculate a soil dermal contact RBEL for COCs with a vapor pressure in mm HG≥ 1.

**Surface Soil - $^{Tot}Soil_{Comb}$**

**Tier 2 Evaluation**

Use these tables to document the derivation of Tier 2 $^{Tot}Soil_{Comb}$ PCLs. Show the calculations in this appendix.

Specify if table is for on-site or off-site property _____ On-site _____ Off-site

Off-site land use(s) for purpose of PCL development[1]: _____ Residential _____ Commercial/industrial

| | Soil bulk density $\rho_b$ ($g/cm^3$) | Total porosity $\theta_T$ ($cm^3/cm^3$) | Volumetric water content $\theta_{ws}$ ($cm^3/cm^3$) | Volumetric air content $\theta_{as}$ ($cm^3/cm^3$) | Fraction organic carbon foc (g/g) | Garden soil fraction organic carbon foc (g/g) | Fraction vegetative cover V | Wind speed $U_m$ (m/s) | Equivalent threshold value of windspeed $U_t$ (m/s) | Function dependent on ($U_t/U_m$) F(x) | Averaging time AT.w (years) | Exposure duration ED.w (years) | Exposure frequency EF.w (days/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tier 1 defaults | 1.67 | 0.37 | 0.16 | 0.21 | 0.008 | 0.008 | 0.50 | 4.80 | 11.32 | 0.224 | 25 | 25 | 250 |
| Tier 2 values | | | | | | | | | | | | | |

| COC | Source area size (acres) | Affected soil thickness $d_s$ (cm) | Q/C | VFss | PEF | Carcinogenic | | | | | | Noncarcinogenic | | | | | | $^{Tot}Soil_{Comb}$ PCL (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (mg/m³/mg/kg) | | Air RBEL Inh-c | Soil RBEL Ing-c | Soil RBEL Derm-c | AbgVeg RBEL Ing-c | BgVeg RBEL Ing-c | PCL | Air RBEL Inh-nc | Soil RBEL Ing-nc | Soil RBEL Derm-nc | AbgVeg RBEL Ing-nc | BgVeg RBEL Ing-nc | PCL | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

[1] Repeat the table if needed for different off-site land uses.

## Surface and Subsurface Soil - $^{GW}$Soil

### Tier 2 Evaluation

Specify media to which tables apply ____ Surface soil ____ Subsurface soil

Specify if table is for on-site or off-site property ____ On-site ____ Off-site
Off-site land use(s) for purpose of PCL development[1]: ____ Residential ____ Commercial/industrial

| | Soil bulk density $\rho_b$ (g/cm$^3$) | Volumetric water content $\theta_{ws}$ (cm$^{3/}$/cm$^3$) | Volumetric air content $\theta_{as}$ (cm$^{3/}$/cm$^3$) | Fraction organic carbon foc (g/g) | Groundwater Darcy velocity $U_{gw}$ (cm/year) | Aquifer thickness $b_{gw}$ (m) | Ground-water gradient i (m/m) | Hydraulic conductivity K (m/day) | Average annual precipitation P (cm/yr) | Net infiltration rate $I_f$ (cm/yr) | Saturated hydraulic conductivity of vadose zone soils $K_{vs}$ (cm/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tier 1 defaults | 1.67 | 0.16 | 0.21 | 0.002 | NA | NA | NA | NA | NA | NA | NA |
| Tier 2 values | | | | | | | | | | | |

| COC | Critical GW PCL (from Table 12A) | | Affected soil thickness $L_1$ (cm) | Depth from top of affected soil to gw table $L_2$ (cm) | Source area width parallel to gw flow $W_s$ (m) | GW mixing zone thickness $\delta_{gw}$ (m) | Soil-leachate partition factor $K_{sw}$ (mg/L/mg/kg) | Lateral dilution factor LDF | $^{GW}$Soil PCL (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| | (mg/L) | pathway[2] | | | | | | | |
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[1] Repeat the table if needed for different off-site land uses.
[2] Specify the pathway for the critical groundwater PCL ($^{GW}GW_{Ing}$, $^{GW}GW_{Class3}$, $^{Air}GW_{Inh-V}$ , ecological PCL (eco), $^{SW}$GW, etc.)

## Subsurface Soil – $^{Air}Soil_{Inh-V}$
### Tier 2 Evaluation

Specify if table is for on-site or off-site property _____ On-site _____ Off-site
Off-site land use(s) for purpose of PCL development[1]: _____ Residential _____ Commercial/industrial

| | Soil bulk density $\rho_b$ ($g/cm^3$) | Total porosity $\theta_T$ ($cm^3/cm^3$) | Volumetric water content $\theta_{ws}$ ($cm^3/cm^3$) | Volumetric air content $\theta_{as}$ ($cm^3/cm^3$) | Averaging time[2] AT.w (years) | Exposure duration[2] ED.w (years) | Exposure frequency[2] EF.w (days/yr) |
|---|---|---|---|---|---|---|---|
| Tier 1 defaults | 1.67 | 0.37 | 0.16 | 0.21 | 25 | 25 | 250 |
| Tier 2 values | | | | | | | |

| COC | Source area size (acres) | Affected soil thickness $d_s$ (cm) | Q/C | $K_d$ ($cm^3$-water/g-soil) | VFss ($mg/m^3/mg/kg$) | Carcinogenic | | Noncarcinogenic | | $^{Air}Soil_{Inh-V}$ PCL (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | $^{Air}RBEL_{Inh-c}$ | PCL | $^{Air}RBEL_{Inh-nc}$ | PCL | |
| | | | | | | | | | | |
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[1] Repeat the table if needed for different off-site land uses.
[2] Prior approval from the TCEQ Executive Director is required for the variance (see §350.74(j)(2)).

**Theoretical Soil Saturation Limit ($C_{sat}$)**

Use these tables to determine a property-specific theoretical soil saturation limit in order to demonstrate the volatilization pathways are not applicable for a particular COC. See §350.75(i)(8) for applicability. Support non-default parameters by providing supporting documentation, the equation, and calculations in this appendix.

Specify media to which tables apply _____ Surface soil _____ Subsurface soil

| | Volumetric water content in vadose soils $\theta_{ws}$ ($cm^3/cm^3$) | Volumetric air content in vadose soils $\theta_{as}$ ($cm^3/cm^3$) | Fraction organic carbon in soil/gw $F_{oc}$ (g/g) | Soil bulk density $\rho_b$ ($g/cm^3$) |
|---|---|---|---|---|
| Tier 1 | 0.16 | 0.21 | 0.002 | 1.67 |
| Tier 2 | | | | |

| COC | Aqueous solubility of pure COC S (mg/L) | Henry's Law Constant (air-water partition coefficient) H′ | Soil-water partition coefficient $K_d$ ($cm^3/g$) | Organic carbon partition coefficient $K_{oc}$ ($cm^3/g$) | $C_{sat}$ PCL (mg/kg) |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

**Residual Soil Saturation Limit**

Use these tables to determine the presence of NAPL and estimate the concentration of an organic COC at which NAPL becomes mobile. See §350.75(i)(9) for applicability. **Support non-default parameters by documentation and explanation.** Support non-default parameters by providing supporting documentation, the equation, and calculations in this appendix.

Specify media to which tables apply ☐ Surface soil ☐ Subsurface soil

| | Residual saturation $Res_{sat}$ ($cm^3/cm^3$) | Total soil porosity $\theta$ ($cm^3/cm^3$) | Density of NAPL $\rho_{NAPL}$ ($g/cm^3$) | Soil bulk density $\rho_b$ ($g/cm^3$) |
|---|---|---|---|---|
| Tier 1 | 0.04514[1] | 0.37 | 1 | 1.67 |
| Tier 2 | | | | |

| COC | $Soil_{Res}$ PCL (mg/kg) |
|---|---|
| | |
| | |
| | |

[1] The value listed in the rule is in error.

**Risk Level and Hazard Check**

Specify media to which table applies ____ Surface soil ___ Subsurface soil ___ Groundwater

Use this table to document the adjustment of a PCL based on cumulative risk. Repeat this table for each complete or reasonably anticipated to be complete exposure pathway in the medium for which there are 10 or more carcinogens or 10 or more noncarcinogens acting through a single exposure pathway. When adjusting the $^{Tot}Soil_{Comb}$ PCL using exposure areas, specify the exposure area to which the adjustment applies. Do not use this table for $^{GW}Soil$, $^{GW}GW_{Class3}$, or $^{SW}GW$.

Complete this form for both the carcinogenic and noncarcinogenic effects for each COC for each human health exposure pathway using PCLs calculated at chosen tier. For example, for a given exposure pathway, if a Tier 1 PCL is calculated for COC "X," a Tier 2 PCL is calculated for COC "Y," and a Tier 3 PCL is calculated for COC "Z," those PCLs are included in the table together and are not segregated by tier. This is a precursor to establishing critical PCLs. If a PCL was not established because of lack of an applicable toxicity factor, input "NA" for the COC in the applicable column. For TPH, complete only the noncarcinogenic portion and do not handle concurrently with the other non-TPH COCs. TPH is treated in isolation. See TCEQ guidance document *Risk Levels and Hazard Indices* (RG-366/TRRP-18) for specific information on cumulative adjustments and *Development of Human Health PCLs for Total Petroleum Hydrocarbon Mixtures* (RG-366/TRRP-27) for TPH.

| COC` | Carcinogenic Endpoint | | | Non-Carcinogenic Endpoint | | |
|---|---|---|---|---|---|---|
| | $PCL_i$-adj | $PCL_i$ (mg/kg or mg/L) | $PCL_i$-adj/$PCL_i$ (ratio) | $PCL_i$-adj | $PCL_i$ (mg/kg or mg/L) | $PCL_i$-adj/$PCL_i$ (ratio) |
| | | | | | | |
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| **Cumulative Risk Level (RL):** | | | | **Hazard Index (HI):** | | |

## Groundwater Non-Default Affected Property Parameters

Name(s) of groundwater-bearing unit(s): _____

**COC-Specific Affected Property Parameters**

| COC | Cross sectional area of air emissions source A ($m^2$) | Length of air emissions source parallel to wind direction L (m) |
|---|---|---|
| | | |
| | | |
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| | | |
| | | |

**Affected Property Parameters**

| Term | Affected property parameters | Tier 1 defaults | Value used for Tier 2/3 |
|---|---|---|---|
| GW pH | Measured groundwater pH | NA | |
| $\sigma_y$ | Transverse air dispersion coefficient (m) (dispersion estimates based on the Pasquill-Gifford system adopted by U.S. Public Health Service, Turner, 1970, *EPA Workbook of Atmospheric Dispersion Estimates*; see Cooper & Alley, 1994, *Air Pollution Control*) | NA | |
| $\sigma_z$ | Vertical air dispersion coefficient (m) (dispersion estimates based on the Pasquill-Gifford system adopted by U.S. Public Health Service, Turner, 1970, *EPA Workbook of Atmospheric Dispersion Estimates*; see Cooper & Alley, 1994, *Air Pollution Control*) | NA | |
| Q | Air volumetric flow through mixing zone ($m^3/s$) | NA | |

**Groundwater – $^{GW}GW_{Ing}$[1] or $^{GW}GW_{Class3}$[1] and $^{Air}GW_{Inh-V}$**

Groundwater-bearing unit: _____ Repeat tables for each groundwater-bearing unit.
Specify if table is for on-site or off-site property _____ On-site ____ Off-site
Off-site land use(s) for purpose of PCL development[2]: _____ Residential ____ Commercial/industrial

**Tier 2 Evaluation**

| | Total porosity (vadose zone) $\theta_T$ ($cm^3/cm^3$) | Volumetric water content (vadose zone) $\theta_{ws}$ ($cm^3/cm^3$) | Volumetric air content of vadose zone soils $\theta_{ws}$ ($cm^3/cm^3$) | Volumetric water content (capillary fringe) $\theta_{wcap}$ ($cm^3/cm^3$) | Volumetric air content (capillary fringe) $\theta_{acap}$ ($cm^3/cm^3$) | Vadose zone thickness $h_v$ (cm) | Capillary fringe thickness $h_{cap}$ (cm) | Depth to gw $L_{gw}$ (cm) | Average windspeed $U_{air}$ (cm/sec) | Ambient air mixing zone height $\delta_{air}$ (cm) | Averaging time[3] AT.w (years) | Exposure duration[3] ED.w (years) | Exposure frequency[3] EF.w (days/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tier 1 defaults | 0.370 | 0.16 | 0.21 | 0.333 | 0.037 | 300 | 5 | 305 | 240 | 200 | 25 | 25 | 250 |
| Tier 2 values | | | | | | | | | | | | | |

| COC | Source area width $W_g$ (cm) | $VF_{wamb}$ ($mg/m^3$/mg/L) | Carcinogenic | | | | Noncarcinogenic | | | | MCL, MCL2 or EPA[4] | $^{GW}GW_{Ing}$ or $^{GW}GW_{Class3}$ PCL | | $^{Air}GW_{Inh-V}$ PCL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | $^{GW}RBEL_{Ing}$ or $^{GW}RBEL_{Class3}$ | PCL | $^{GW}RBEL_{Inh}$ | PCL | $^{GW}RBEL_{Ing}$ or $^{GW}RBEL_{Class3}$ | PCL | $^{GW}RBEL_{Inh}$ | PCL | | (mg/L) | >S[5] | (mg/L) | >S |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
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[1] Only applies for COCs for commercial/industrial land use without an MCL and those for which a variance under §350.74(j)(2) is obtained.
[2] Repeat the table if needed for different off-site land uses.
[3] Prior approval from TCEQ Executive Director for the variance is required (§350.74(j)(2)).
[4] Specify whether the PCL is based on the MCL, secondary MCL, or other EPA value.
[5] Specify if PCL exceeds the aqueous solubility limit.

## Groundwater - $^{SW}$GW and $^{Sed}$GW

Provide a map that illustrates how the input parameters were measured or determined.

Groundwater-bearing unit: _____

Repeat tables for each affected GWBU discharging to surface water.

Surface water body: _____

### Parameter Selection for Tier 2 Dilution Factor Models

| Term | Description | Defaults | Value Used |
|---|---|---|---|
| 7Q2 flow rate | Seven-day low-flow occurring on average every two years (cm/s) | NA | |
| $U_{gw}$ | Groundwater Darcy velocity (cm/yr) | NA | |
| K | Hydraulic conductivity (cm/s) | NA | |
| i | Lateral hydraulic flow gradient (cm/cm) | NA | |
| $\delta_p$ | Thickness of affected groundwater (cm) in excess of the $^{SW}$RBEL or the $SW_{eco}$[1] | NA | |
| $\delta_{pi}$ | Thickness of affected groundwater in excess of $^{SW}$RBEL discharging to surface water stream[1] (cm) | NA | |
| $L_m$ | Influent width of groundwater PCLE zone at point of discharge to surface water[1] (cm) | NA | |
| $Q_{igw}$ | Average influent flow of affected groundwater to surface water[1] ($cm^3/s$) | NA | |
| $V_{sw}$ | Average surface water velocity in groundwater discharge mixing area (cm/s) | lake: 0.5 cm/s<br>tidal water: 1 cm/s<br>large river (>100 cfs):<br>$3.5 \times (7Q2)^{0.5}$ cm/s | |
| $W_{sw}$ | Distance from the shore extending into the surface water body through which affected groundwater discharges through sediment into surface water[1] (cm) | NA | |
| $h_{sw}$ | Depth of surface water mixing area above the affected groundwater discharge to surface water (cm) | 30 | |
| $Q_{sw}$ | Flow of surface water through the surface water mixing area - 7Q2 flow for a stream with 7Q2 ≤ 100 cfs or mixing area flow for other water body ($cm^3/s$) | NA | |
| $\rho_{sed}$ | Sediment bulk density ($g/cm^3$) | 1.67 | |
| $\theta_T$ | Total sediment porosity ($cm^3/cm^3$) | 0.37 | |
| foc | Fraction organic carbon in sediment (g/g) | 0.01 | |
| $K_{sed-w}$ | Sediment-groundwater partition coefficient (mg/L/mg/kg) | NA | |
| SWMF | Surface water mixing factor | 1 | |

| COC | $^{SW}$RBEL or $SW_{eco}$ (mg/L) | DF | $^{SW}$GW (mg/L) | Tier |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

| COC | Sediment RBEL | $k_d$ | $k_{oc}$ | $^{Sed}$GW (mg/L) | Tier |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

[1] This value may be determined for each COC if desired. If so, attach separate table listing the value used for each COC.

**Appendix 10 Laboratory Data Packages and Data Usability Summary (NA)**

Use this appendix to provide lab reports and supporting information. Print lab reports double-sided and also include with the report a CD with the lab reports in pdf format. Submit one data usability summary for all the data (field and laboratory) used in this APAR. Report data in conformance with the TCEQ guidance document *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13). For each laboratory data package submitted with the APAR, provide a signed laboratory data package cover page (LDCP) and the items listed on the LDCP. The LDCP form is provided in Appendix A of *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13).

**Appendix 11 Miscellaneous Assessment**

Include the results of assessment or sampling activities that are not included in the media sections. This section may be used to describe geophysical investigations such as seismic surveys, ground-penetrating radar surveys, and resistivity surveys; wipe samples; waste sampling (other than for waste classification purposes); concrete slab sampling; biota sampling (flora or fauna); food sampling; and other topics applicable to the assessment. Include tables and figures as necessary to summarize and illustrate assessment results.

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

June 18, 2010

Mr. Charles R. Robertson
Vice President
Terra-Solve, Inc.
3216 Commander Drive, Suite 103
Carrollton, Texas 75006-2518

Re: Comments to "Request for Additional Information"
Former F.J. Doyle Salvage
(b) (6) [redacted] (905 N. Poplar Street), Leonard, Fannin County, Texas
TCEQ SWR No. 80951; EPA CERCLIS No. TXD980865109; Customer No. CN600359095; Regulated Entity No. RN100649227

Dear Mr. Robertson:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above referenced submittal. A list of the comments is enclosed.

Please call me at (512) 239-4940 if you need additional information or wish to discuss these comments or the due date. Thank you for your cooperation in this matter.

Sincerely,

PLall

Pindy Lall, Project Manager
VCP Team 1, VCP-CA Section
Remediation Division

PSL/jdm

Enclosure: Comments

cc: Mr. Sam Barrett, Waste Program Manager, TCEQ Region 4, Dallas/Fort Worth

TCEQ letter dated June 18, 2010
ENCLOSURE
TCEQ SWR No. 80951

Comments

1. Surface soils need to be delineated horizontally to 1.1 mg/kg for polychlorinated biphenyls (PCBs). Surface soils under Texas Risk Reduction Program (TRRP) are soils at a depth of 0-15 feet. Copper and hexachlorobenzene will also be required to be delineated horizontally.

2. Soil contamination will need to be delineated vertically.
   a. Soil vertical delineation is required to method quantitation limit (MQL) unless a groundwater sample is taken at the site.
   b. If a groundwater sample is taken, the entire soil column can be assumed to be contaminated.

3. If the site enters the Voluntary Cleanup Program (VCP), a groundwater sample will be required.

4. In situations where the entire soil column is assumed to be contaminated, a control (such as a parking lot that serves as an impervious cover) may be implemented to prevent exposure. A parking lot may be utilized as a impervious cover depending on the material used; however, maintenance of the parking lot would be required to ensure the integrity of the parking lot as a control. Any area that is not covered will be required to be removed, decontaminated, and/or controlled by other means.

5. A demonstration that the drainage ditches are not impacting surface water will be necessary.

**Appendix 12 Waste Characterization and Disposition Documentation (NA)**

Use this appendix to document waste characterization and disposition of wastes associated with an assessment or remediation, including investigation derived waste and other wastes generated during field activities. Describe the wastes generated and the results from the completed waste classification and disposal/treatment activities. Supporting documentation may include written documentation and process knowledge. Provide copies of waste characterization sample analytical data packages.

**Appendix 13 Photographic Documentation**

If not provided elsewhere, include relevant dated and oriented photographs depicting the affected property and field activities (e.g., potential source areas, surrounding properties, abatement activities, etc.).

**Appendix 14 Standard Operating Procedures (NA)**

Use this appendix to provide copies of the standard operating procedures followed during field activities (for example, sampling methods, drilling methods).

**Appendix 15 OSHA Health and Safety Plan (§350.74(b)(1)) (NA)**

Use this appendix only for documentation supporting the use of an available eight-hour time weighted average occupational inhalation criteria as the air inhalation RBEL. Provide documentation of the health and safety plan, a certification that the plan is followed, and the demonstration that offsite receptors are protected per §350.74(b)(1).

**Appendix 16 Reference List**

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), for Fannin County, Texas, Unincorporated Area; Panel Number 480807 0010B, November 8, 1977.

*Geologic Atlas of Texas, Sherman Sheet;* University of Texas at Austin, Bureau of Economic Geology, 1967, revised 1991.

GeoSearch, LP (GeoSearch), The GeoSearch Aerial Photo Decade Package, Job Number 11795, November 9, 2009, for Aerial Photographs, 1950, 1963, 1969, 1989, 1996, and 2004.

GeoSearch, LP (GeoSearch), The GeoSearch Radius Report with Geoplus; Job Number 11795, November 9, 2009.

National Oceanic & Atmospheric Administration, National Climatic Data Center; http://www.noaa.com.

Railroad Commission of Texas, Public GIS Map Viewer, http://gis2.rrc.state.tx.us/public.

Texas Water Development Board (TWDB) Groundwater Database, Fannin County.

www.twdb.state.tx.us/publications/reports/GroundWaterReports/GWDatabaseReports/GWdatabaserpt.htm
TexShare Database, Sanborn Map Reports. No coverage.

United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS), *Soil Survey of Fannin County, Texas;* 2001.

United States Geological Survey (USGS) 7.5-Minute Series Topographic Map; *Leonard, Texas Quadrangle;* 1964.

Enclosure 3

Copy of *1998 TNRCC Screening Site Inspection Report* and May 1997 *EPA Preliminary Assessment Report*

SWR 80951

partial of pdf in 80951 on V drive
" 9121320 smaller.pdf "
sent by Rick Robertson 6/17/10
email

RN100649227

PRELIMINARY ASSESSMENT REPORT

Doyle, Frank J.

EPA ID NO. TXD980865109

LEONARD, FANNIN COUNTY, TEXAS

*May 1997*

Prepared for:

Environmental Protection Agency

Dallas, TX


Fluor Daniel, Inc.
Submitted by:

for Wendy Bigley
Project Geologist

Fluor Daniel, Inc.
Approved by:

Bill Park
Project Manager


9121320

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**Attachments**

Attachment 1: Photographic Documentation

## 1.0 INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the U.S. Environmental Protection Agency (EPA), Waste Management Division, Region 6 conducted a Preliminary Assessment (PA) at the Doyle, Frank J. site in Leonard, Fannin County, Texas. The purpose of this investigation was to collect information concerning conditions at the site sufficient to assess the threat posed to human health and the environment and to determine the need for additional CERCLA/SARA or other appropriate action. The scope of the investigation included review of available file information, a comprehensive target survey, and an onsite reconnaissance.

## 2.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

### 2.1 Site Description

The Doyle, Frank J. site, hereafter referred to as the Frank J.Doyle Transformer site is located at 305 E. Cottonwood in a predominately residential area of Leonard, Fannin County, Texas (Figure 1- Site Location Map). The geographical coordinates are 33° 23' 23" North latitude and 96° 14' 34" West longitude (Figure 1 ). To reach the site from Dallas, travel north on Hwy 78, turn west on Hackberry Street, then north on Poplar Street. The site is located on the corner of Poplar and Cottonwood. The site is bound on the north, south, and west by residential homes and the Leonard High School to the east (Figure 2- Site Sketch).

Frank J. Doyle Transformer site is approximately 0.6 acres in size (Figure 2). There is one shop building located on site. The shop houses two draining tables used to drain residual oil out of transformers. The yard of the site consists of a cement drive and gravel ground cover. In the southwest corner of the site is a concrete pad that is used to store 55 gallon drums and three (two 500 gallon and one 375 gallon) tanks located inside a concrete containment area. The used oil storage area is also the point where the used oil is vacuumed out via a vacuum truck and hauled off site for disposal. The gravel yard consists of storage for various sizes of transformers. The yard also contains a twenty yard dumpster that stores general shop refuse. The site is completely surrounded by a wooden fence. There are three gates that lead onto the property located on the north, east and west sides (Figure 2). The gates are secured and locked after business hours.

A site reconnaissance was conducted by Fluor Daniel on May 20, 1997. This site is currently active and

is bordered by residential properties to the north, south and west, and Leonard High School to the east (Figure 2). The owner, Mr. Frank J. Doyle, retired in January 1997 and his son, Gary Doyle currently operates the business. The site reconnaissance revealed evidence of soil contamination with yellowish/green staining of the soil (Photos #7 & 8). In addition to the staining on the ground, the area around the shop showed signs of deterioration and staining (Photo #8 ). The site is located on relatively flat terrain that slopes gently toward the northeast boundary (Figure 1).

### 2.2 Operational History

Frank J. Doyle Transformer is currently active and has been in operation since approximately 1974. Mr. Doyle obtains transformers from companies in Texas, Oklahoma, Louisiana and Arkansas. Salvage operations involve recovering oil, wiring and scrap metal from the transformers. Before salvage operations begin, the used oil is pumped out of the transformers and placed in a storage tank located in the southwest corner of the property. The transformer is then placed on a draining table to allow any residual oil to displace. The remaining oil is placed in 55 gallon drums which are stored on a concrete pad also located in the southwest corner of the property. From the late 1970's to early 1980's, the site only accepted non-Polychlorinated Biphenyls (PCB) transformers [Reference 1, pg. 1]. Prior to that, Mr. Doyle used transformer oil for weed control and has distributed the oil to various individuals throughout Leonard for use as a weed killer [Reference 2, pg. 3].

Mr. Frank J. Doyle registered with the Texas Water Commission (TWC) now called the Texas Natural Resources Conservation Commission (TNRCC) in 1993 for various non-hazardous waste generated on site such as; 1.) used oil from non-PCB transformer being scrapped for salvage, 2.) ash residue from furnace used to remove varnish from copper wire, 3.) general plant refuse from office and shop, 4.) various storage containers for used oil including one 375 gallon, two 500 gallon and 55 gallon drums that are stored on a concrete pad located on the southwest corner of the property ( Photos # 11&13 ), 5.) high temperature oven to burn varnish off copper and 6.) a four yard dumpster for the accumulation of plant trash (Photo #15). The registration reflects hazardous and/or industrial waste generated and management activities for which Mr. Doyle has provided notification [Reference 3, pp. 2-25 ].

### 2.3 Waste Characterization

Past site inspections of Frank J. Doyle Transformer include a Site Assessment sampling investigation conducted by the Ecology & Environment's Technical Assistant Team (TAT) on October 12, 1990 and

April 19, 1991 and two EPA PCB inspections conducted on July 20, 1990 and September 7, 1994. Under the supervision of the EPA, Mr. Doyle's contractor, Worldwide Reclamation conducted surface and subsurface soil sampling on May 23 and 24, 1995 [Reference 2, pg. 3]. An effort was made to obtain these reports and analytical data pertaining to these sampling events but to date attempts have been unsuccessful.

On July 10, 1995 TAT collected 68 surface and subsurface soil samples. The samples were collected from 24 locations outside of the facility on the west, south and east sides to determine the presence and/or extent of PCB contamination [Reference 2, pg. 2].

Mr. Frank J. Doyle's house is the nearest residence and is located just west of the site. On July 12, 1995 TAT collected soil samples from the Doyle's residence just outside the perimeter of the fence of the salvage yard. The laboratory results indicate that the highest concentration of PCB's in the Doyle's yard was 10.44 parts per million (ppm) for Aroclor 1260 . This location was marked as RO7 and is located southwest of the gate that leads from the salvage yard to the Doyle's residence (Reference 3 and Figure 3- Sample Results Map). The residence located south of Frank J. Doyle Transformer was also sampled. The laboratory results showed that the highest concentration of Aroclor 1260 in the 0-6 inch sample interval was 27.9 ppm. This location was labeled as RO1 and was collected directly across from the outside storage area for the transformer waiting to be salvaged. At the same residence, surface soil samples were collected in the northeast corner of the property. These samples were southeast of the transformer storage area and revealed the highest Aroclor 1260 concentration of 37.7 ppm [Reference 2. Pp. 5-32].

Soil samples were also collected in the alleyway between the site and the residence. Sample AO1 had the highest Aroclor 1260 concentration of 5.7 ppm in the 0-6 inch interval and 48.2 ppm for the 12-18 inch interval. Sample AO2 had the highest Aroclor 1260 concentration of 852 ppm at the 6-12 inch interval and a concentration of 115 ppm for 18-24 inch interval. Both of these sample locations are located across the outside storage area for the transformers and down gradient from the site (Figure 3-Sample Results Map).

The highest concentration of Aroclor 1260 found on site was 1590 ppm. It was a grab surface soil sample collected near the gate located on the east side of the property. Another grab surface soil sample was

collected just outside the east gate with a concentration of Aroclor 1260 of 2730 ppm. This location is outside the fenced perimeter of the site and is assessable to the public. A grab soil sample was also collected at the location of the culvert and the analytical results showed the third highest concentration of PCB Aroclor 1260 with a 50.9 ppm concentration (Figure 3).

## 3.0 GROUND WATER PATHWAY

### 3.1 Hydrogeologic Setting

Fannin County lies along the physiographic boundary between the Grand Prairie (to the west) and the Black Prairie (to the east) [Reference 4, pg. 4]. Geologically this area is characterized by transgressive and regressive outcrops of formations. The Austin group from Upper Cretaceous deposits outcrops in Fannin County. Underlying the Austin Chalk is the Eagle Ford Shale Formation (300-400 feet thick) and then the Woodbine Formation, these formations are primarily composed of limestones, shales and sandstones respectively.

The Woodbine Formation is the primary water supply in the area of Frank J. Doyle Transformer site and is considered a minor aquifer by the state of Texas. The depth to water in the Woodbine ranges from 432-449 feet below land surface (bls) in Fannin County [Reference 5, pp. 6-9].

### 3.2 Ground Water Targets

There are three wells within a one mile radius of the site. Two of the three wells (701 and 702) are used for public drinking water supply. The third well (9B) is a private well and is approximately 0.75 miles to the northwest of the site [Reference 5, pg. 2].

The city of Leonard obtains its water from two wells (701 and 702) which are completed in the Woodbine Aquifer. Well 701 is located on the corner of (b) (9) [redacted] which is approximately 0.2 miles southwest of the site and well 207 is approximately 0.75 miles northwest of the site [Reference 5, pg. 2]. According to the well logs, the Austin Chalk was encountered at 2 feet bls, the average depth of the screened interval is 1464 bls and the total average depth of the two wells is 1697 feet bls [Reference 5, pp. 7-17]. During the site reconnaissance it was learned that the two wells are both pumped into a single underground holding tank therefore creating a blended system [Reference 6, pg. 1]. A Texas Department of Health water analysis was obtained for the two wells 701 and 702. The laboratory analysis

revealed that as of March 17, 1995 the city's water was not tested for PCB [Reference 7, pg. 2].

In order to apportion the population of Leonard using the city water system, the total population of Leonard within a one mile radius of the site (1503 people) was distributed evenly between the two wells that supply drinking water to the systems [Reference 8, pg. 1]. One well (701) is located within a quarter mile radius of the site [Reference 5, pg. 2]. Therefore, half the population of Leonard (753 people) are attributed to the use of well 701. The other well that comprises the blended system is located within the quarter mile to half mile radius of the site. A private well is located within the half mile to one mile radius of the site. Therefore, one residential home is assumed to use this well as a source for drinking water. The number of people in that home is estimated at 3 people using the population density factor of 2.48 for Fannin county [Reference 9, pg.2].

The number of domestic wells located outside of the one-mile distance was undetermined. Therefore, the number of people using the water outside of the one mile radius of the site was determined by counting the number of homes located on the topographic map (Figure 4- Four mile Radius Map). The number of homes located from the one to four mile distance categories were multiplied by the population density factor of 2.48 persons/household for Fannin county [Reference 9, pg. 2]. The following table lists the number of domestic and public well water users within each distance category.

| Distance from site (mi) | Number of people using ground water |
|---|---|
| 0-¼ | 752 |
| ¼-½ | 751 |
| ½-1 | 3 |
| 1-2 | 233 |
| 2-3 | 215 |
| 3-4 | 253 |

### 3.3 Ground Water Conclusions

A release of PCB's into the groundwater is not suspected because the blended system of drinking water for the city of Leonard was analyzed on March 17, 1995 for various hazardous substances by the Texas

Health Department. However, this analysis contains no results for the PCB compounds. The two wells that comprise the blended system are properly installed and securely cemented to the slotted screen which is at an average depth of 1464 feet bls. Due to the low permeability of the underlying formations at the site, the depth of water at each of the public supply wells and the fact that PCB's are relatively insoluble in water and not likely be mobilized, it is not likely that PCB's could contaminate the ground water supply of the City of Leonard.

## 4.0 SURFACE WATER PATHWAY

### 4.1 Hydrogeologic Setting

A drainage ditch is located along the western boundary of the site. During the site reconnaissance it was observed that a culvert was located just north of the main gate of the Doyle Transformer property. Inside the fence there was a low lying area where surface run-off from the site flows into a culvert that drains into the drainage ditch that is located along the western fence of the property (Photo #6 ). An engineer from Hayden Engineers, the company used design the storm sewer system for the city of Leonard, stated that the city has few storm sewers and the majority of the city's runoff is directed out of the city via drainage ditches [Reference 10, pg. 1]. Some of the runoff is directed south and the rest is directed west out of the city. Approximately 0.5 miles southwest of the site lies Boney Creek, which is a small tributary of Lee Creek. Boney Creek is an intermittent creek which is approximately one mile long and drains into Lee Creek . Lee Creek is also intermittent and is approximately four miles long. Other creeks located within a two mile radius of the site are Arnold Creek and Sulphur Creek. Arnold Creek is approximately 1.5 miles south and Sulphur Creek is located one mile east of the site. These creeks are both intermittent (Figure 4-Four Mile Radius Map).

### 4.2 Surface Water Targets

Based on the site reconnaisanace and review of the topographic maps no wetlands were identified within a four mile radius of the site. During the site reconnaissance and confirmation of the topographic map, there are no signs of a perennial stream within the 2 mile downstream distance of the site. The topographic map confirms that the nearest stream, Boney Creek is an intermittent stream. By definition of an intermittent stream, Boney Creek does not have enough water capacity be a source of recreation or a

source for drinking water. Since there were no perennial surface waters identified within the two mile downstream distance, no surface water targets were identified.

### 4.3 Surface Water Conclusions

The only drainage observed onsite was from a drainage ditch located on the western boundary of the property. During the site reconnaissance, there were no creeks or wetlands observed within a 2 mile downstream distance of the site. The topographic map of the area confirms that Boney Creek, located 0.5 miles southwest of the site is an intermittent stream. Since there are no perennial streams within a two mile downstream distance of the site, a threat human health and the environment via the surface water pathway is not suspected.

## 5.0 SOIL EXPOSURE AND AIR PATHWAYS

### 5.1 Physical Conditions

The Frank J. Doyle Transformer site is completely fenced and has secured locks on all the gates. The ground cover consists of a mixture of gravel and concrete. The ground inside the shop and the entrance into the main gate is covered with concrete. The rest of the salvage yard is covered by gravel except for the concrete containment area located in the southwest corner of the property. The pad was used to store sixteen 55-gallon drums. Of the sixteen drums only one drum was labeled as "Non-PCB", the remaining drums were not labeled (Photo #3 ). The concrete pad showed signs of deterioration (Photo # 12). The pad is located adjacent to a concrete containment area that contains two 500 gallon storage tanks and one 375 gallon tank (Photos #10 & 11 ) Inside this concrete containment area, there was a rusted 55 gallon drum that was marked as corrosive (Photo #10 ). It was observed and later confirmed by Mr. Doyle that this was the location where waste oil from the transformers is stored prior removal (Photo #12 ). The used oil is vacuumed out of the holding tanks by a transportation company named Scroggins which is out of Oklahoma [Reference 11]. There was evidence of spilled or leaking oil near the concrete containment area on the day of the site reconnaissance and a yellowish/green staining along the fence line near the

disposal point (Photo #10 ). Prior environmental assessments that were conducted on and off-site have revealed PCB contamination in the soils. The laboratory results of the soil samples collected on and off-site are discussed in section 2.3.

### 5.2 Soil and Air Targets

Frank J. Doyle Transformer is underlain by the Fairie-Dalco soil association. This association is characterized by nearly gently sloping, moderately well drained, very slowly permeable clayey soils overlying chalky limestone [Ref. 14, pp. 1-7]. PCB's are known to be relatively insoluble in water and resistant to chemically breaking down. The Texas Natural Conservation Commission action level for all PCB compounds is 50 ppm [Reference 12, pg. 4].

During the site reconnaissance, Mr. Gary Doyle stated that a maximum of three employees have worked on site since 1974. This does not include subcontractors such as truck drivers, delivery personnel and waste haulers. Leonard High School, which has approximately 225 students attend, is located less than 200 feet to the east. Adjacent to the High School is the Leonard Junior High School, which approximately 200 students attend. South of the Frank J. Doyle Transformer site within the quarter mile radius, lies an elementary school with an attendance of approximately 300 students [Reference 13, pg. 1]. On the day of the site reconnaissance, it was observed that there were numerous students of all ages walking along the alleyway, which lies adjacent the west fence boundary of the site. Earlier reports indicated that the Project Life Day Care facility was located south and adjacent of the site, however it was noted during the site reconnaissance that the day care is no longer in business and this facility is now a residence.

The number of people living within a four mile radius of the site was calculated by the population of the city of Leonard and the number of homes within that distance category. The population of the city of Leonard is estimated at 1503 [Reference 8]. The number of homes, was determined by a house count using the topographic map (Figure 4). The number of homes within the radius was then multiplied by the population density factor of 2.48 for Fannin County [Reference 9, pg. 2].

| Distance from site (mi) | Number of Homes within the area | Number of people living within the area |
|---|---|---|
| 0-¼ | 100 | 248 |
| ¼-½ | 90 | 223 |
| ½-1 | 133 | 330 |
| 1-2 | 94 | 233 |
| 2-3 | 87 | 215 |
| 3-4 | 102 | 253 |

### 5.3 Soil Exposure and Air Pathway Conclusions

Soil exposure appears to pose a threat at the Frank J. Doyle Transformer site because of the identified presence of PCB in the soil, the nearby residential population and a High School located within 200 feet. A release to the air can be suspected because the transformer site was registered with the state of Texas for ash residue from a furnace that was used to remove varnish from copper wire intended for salvage. However, on the day of the site reconnaissance there were no signs of airborne contaminants or debris. The ground cover is a mixture of gravel and concrete and void of vegetation. However, during the site reconnaissance, no odors were detected and there was no indication of blowing dust or soil.

## 6.0 SUMMARY

Mr. Frank J. Doyle has owned and operated Doyle Transformer Salvage from 1974 until January 1997 when his son, Mr. Gary Doyle took over the business operations. Mr. Frank J. Doyle stored used oil from the transformers in holding tanks and 55 gallon drums on a concrete pad prior to transport and disposal.

Reports on sampling inspections conducted by the TAT on October 12, 1990 and April 19, 1991, and by the EPA on July 20, 1990 and September 7, 1994 could not be obtained. However, TAT collected an additional 68 samples from both on and off-site locations. Detections of Aroclor 1260 at off-site residences showed concentrations ranging from 10.44 to 37.7 ppm. The analyses of soil samples collected in the alleyway between the site and the residence north of the site showed concentrations ranging from 5.7 to 852 ppm for Aroclor 1260. On-site analytical results indicate the presence of Aroclor 1260 at concentrations ranging from 50.9 to 2730 ppm.

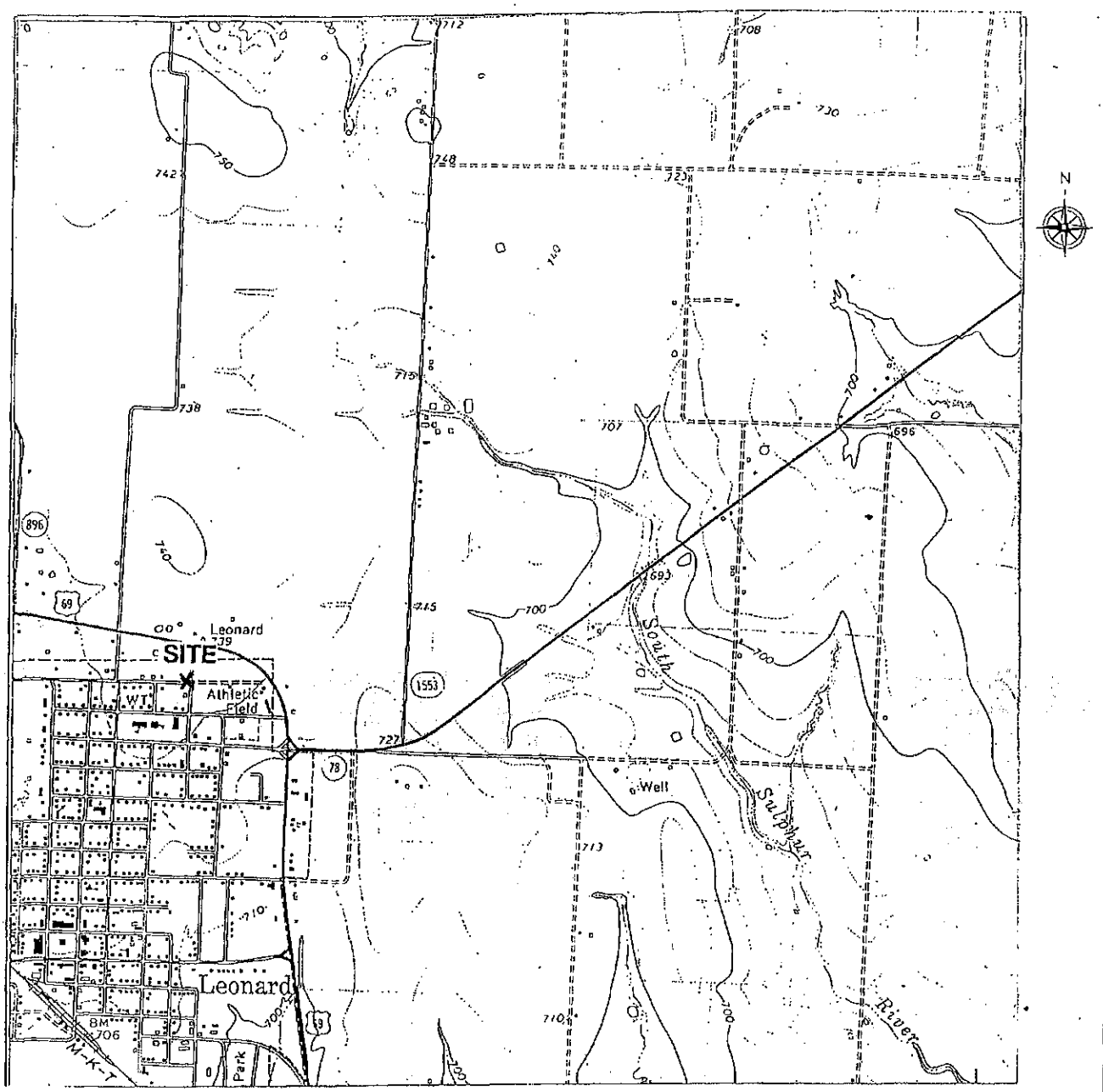
A release of PCBs into the city of Leonard's drinking water via the two public wells near the site is not suspected due to the lithology of the underlying formations and the depth to water in the wells precluding contaminant migration. A perennial surface water body is not located within two miles of the site. Therefore, a threat to human health and the environment via the surface water migration pathway is not likely. Soil exposure appears to be the primary pathway of concern at the Frank J. Doyle Transformer site because of the already identified presence of PCB in the soil, the nearby residential population, and the nearby presence of three schools within 1/4 mile. A potential for a release via the air migration pathway is likely due to the presence of 248 people within 1/4 mile, lack of vegetative growth on or around the outer perimeter of the site, and the former registration of the site with the state of Texas for ash residue that was released from a furnace. This furnace was used to remove varnish from copper wire intended for salvage.

## 7.0 REFERENCES

1. Record of Telephone Conversation. From: Wendy B. Bigley, Fluor Daniel, Inc. To: Mr. Frank J. Doyle, Concerning: Non-PCB Transformer Date. June 3, 1997.
2. Ecology and Environment Site Assessment Report, Prepared for Doyle Transformer Salvage. August 31, 1995.
3. Texas Water Commission, Industrial Solid Waste Management Inventory Initial Notification, January 1, 1986.
4. Jordan, Terry G., Environment and Environmental Perceptions in Texas, American Press, Boston, Massachusetts, 1980.
5. Geosource Incorporated, Water Well Review for 305 E. Cottonwood. May 7, 1997.
6. Logbook of Field Activities. Prepared by: Wendy B. Bigley, Fluor Daniel, Doyle Transformer operations, TXD980865109, May 20, 1997.
7. Texas Department of Health, Bureau of Laboratories, laboratory data on blended drinking water, March 17, 1995.
8. Record of Telephone Conversation. From: Wendy B. Bigley, Fluor Daniel. To: City Clerk at Leonard City Hall. Concerning: Population of Leonard. May 28, 1997.
9. U.S. Bureau of Census. 12th Ed. County and City Data Book. 1994
10. Record of Telephone Conversation. From: Wendy B. Bigley, Fluor Daniel,Inc. To: Hayden Engineers. Concerning: Storm water drainage for the City of Leonard. May 28, 1997.
11. Texas Water Commission request for Texas Waste Code and Authorization for Shipment of waste. Not dated.
12. Texas Natural Resource Conservation Commission. Chapter 335. Industrial Solid Waste and Municipal Hazardous Waste. March 1996.
13. Record of Telephone Conversation. From: Wendy B. Bigley, Fluor Daniel, Inc. To: Leonard High School Secretary. Concerning: Attendance of Leonard schools. May 2, 1997.
14. U.S. Department of Agriculture, Natural Resources Conservation Service. Soil Survey Information, Not dated.

**Figure 1**

**Site Location Map**



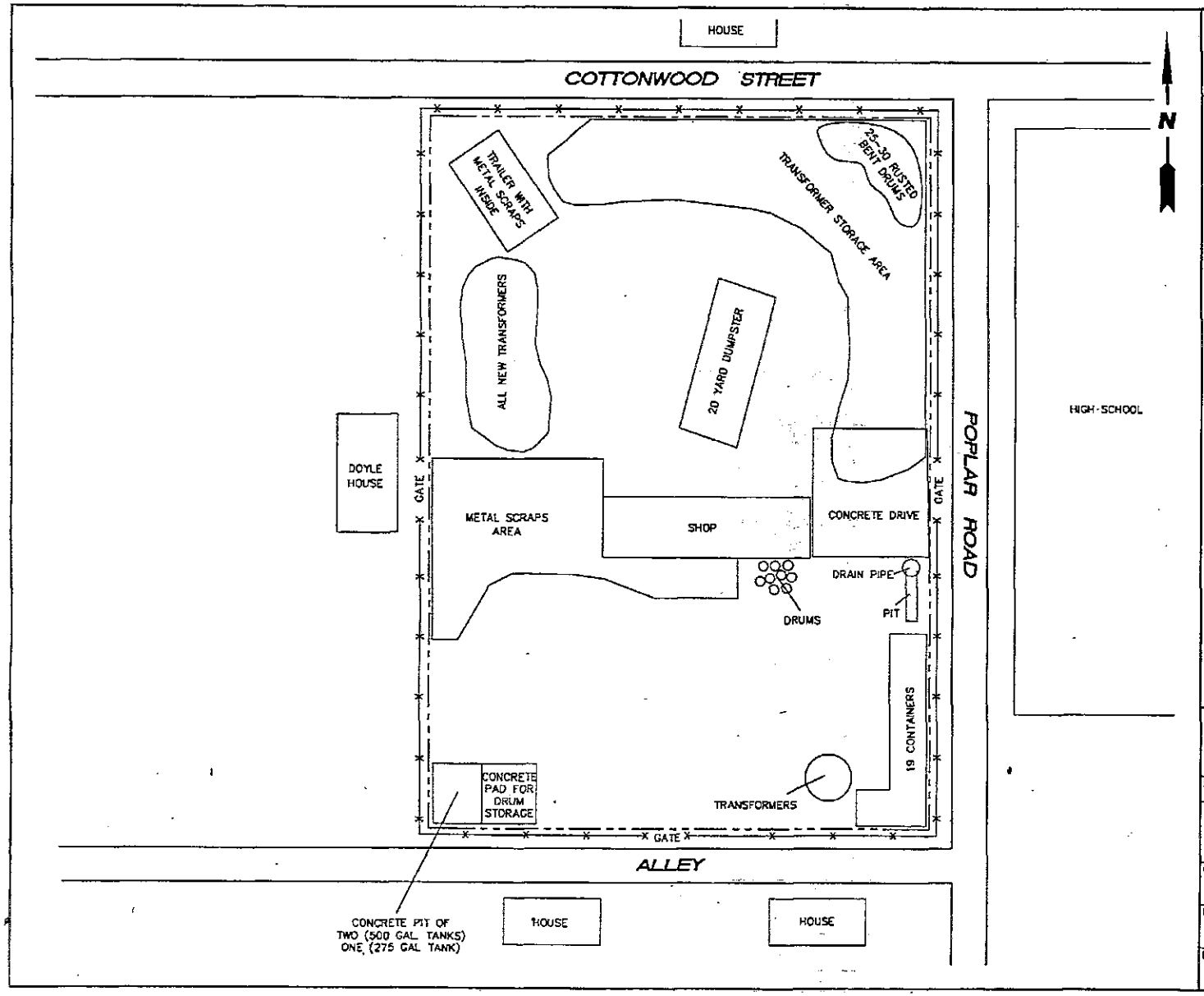

Note:USGS 7.5' Topographic Map, Leonard, TX Quadrangle, 1964.

FLUOR DANIEL

**FIGURE 1**
SITE LOCATION MAP
Doyle, Frank J.
EPA ID No. TXD980865109
Leonard, Collin County, Texas

**Figure 2**

**Site Sketch**




LEGEND

MW- MONITOR WELL

PROPERTY LINE

SUBSURFACE FEATURES

NOT TO SCALE

SITE B-DE-1

FLUOR DANIEL

1201 BELTLINE ROAD
SUITE 100
COPPELL, TEXAS 75019
(972) 341-8300 (TEL)
(972) 341-8365 (FAX)

| REV. NO.: | DRAWING DATE: | ACAD FILE: | DISK 1 |
|---|---|---|---|
| X | 07-JUL-97 | 21SITE.DWG | |

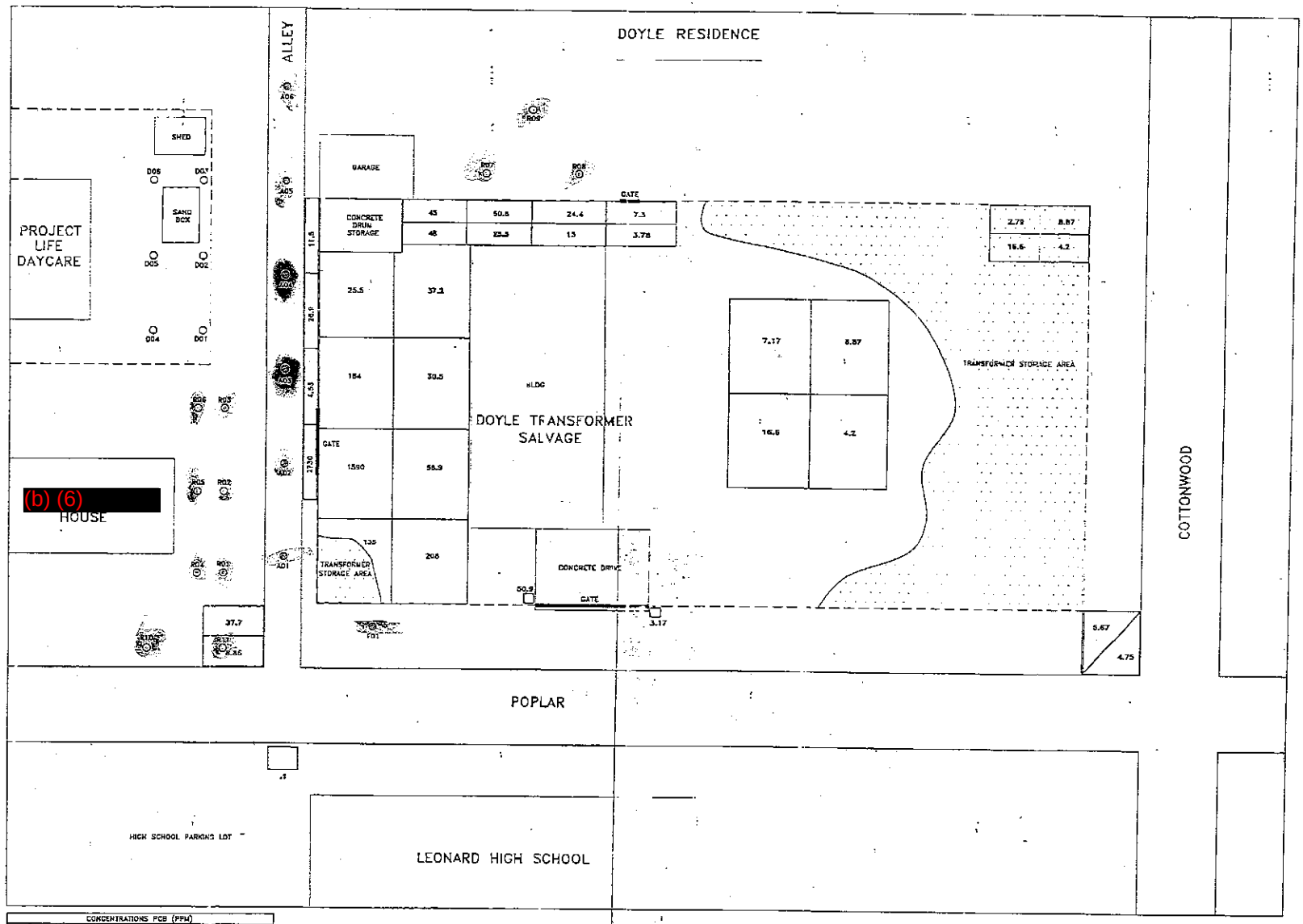
**SITE MAP**

| CLIENT: | PM: |
|---|---|
| FRANK J. DOYLE TRANSFORMER SALVAGE | BP |
| LOCATION: 305 E. COTTONWOOD STREET LEONARD, TEXAS | CHECKED: WB |

| DESIGNED: | DETAILED: | PROJECT NO.: | FIGURE: |
|---|---|---|---|
| WB/BP | T. MONTI | 06682403-77-21 830019999-00 (FDGTI) | 2 |

**Figure 3**

**Sample Location Map**




| CONCENTRATIONS PCB (PPM) | | | | |
|---|---|---|---|---|
| TAT SAMPLE # | DEPTH (INCHES) 0-6 | 6-12 | 12-18 | 18-24 |
| F01 | 2.38 | 14 | 4.81 | ND |
| A01 | 5.7 | 74.60 | 48.2 | ND |
| A02 | 1.57 | 852 | 22 | 115 |
| A03 | ND | 59 | ND | ND |
| A04 | ND | 6.54 | ND | ND |
| A05 | 2.31 | ND | ND | ND |
| A06 | ND | 7.35 | ND | ND |
| R01 | 27.8 | ND | | |
| R02 | 3.75 | ND | | |
| R03 | 4.07 | ND | | |
| R04 | 3.62 | ND | | |
| R05 | ND | ND | | |
| R06 | ND | ND | | |
| R07 | 10.4 | 2.19 | | |
| R08 | 6.97 | ND | | |
| R09 | 2 | ND | | |
| R10 | ND | ND | | |
| R11 | 13.6 | ND | | |

TAT SITE ASSESSMENT SAMPLES

2 FT DEPTH SOIL SAMPLE

1 FT DEPTH SOIL SAMPLE

FENCE

5-23-95 WORLWIDE RECLAMATION SAMPLING GRIDS AND PCB CONCENTRATIONS IN PPM

GRAB SURFACE SOIL SAMPLE

COMPOSITE SUBSURFACE SOIL SAMPLE; COMBINED DEPTH FROM UPPERMOST DEPTH UNDER FILL MATERIAL TO 24 IN.

Figure 3- Sample Results Map

ecology and environment, inc.
Dallas, Texas
International Specialists in the Environment

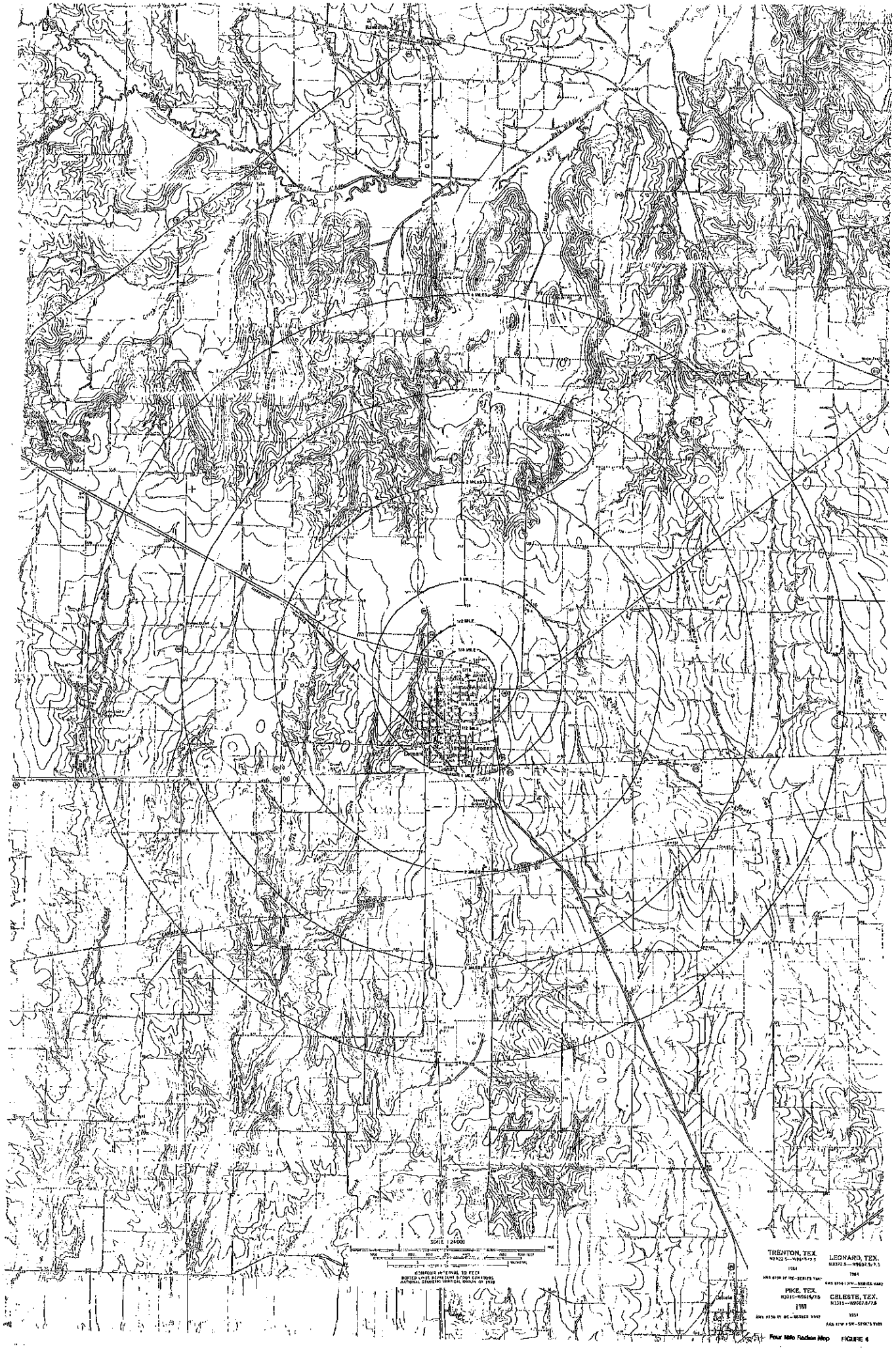
SAMPLE RESULTS MAP
DOYLE TRANSFORMER SALVAGE
CERCLIS # TXD980865109

TDD# T06-9507-002 | Date: JULY 12, 1995

PAN# ETX1204SCA | P.M.: MELISSA STALLINGS

**Figure 4**

**Four Mile Radius Map**




Four Mile Radius Map FIGURE 4

# ATTACHMENT 1

# PHOTOGRAPHIC DOCUMENTATION

Photo No.
3

Neg. No.
1

**Site Name:**
Frank J. Doyle Transformer

**Photographer/Witness** W. Bigley/ K. Westberry

**Location:**
305 E. Cottonwood Street
Leonard, Texas

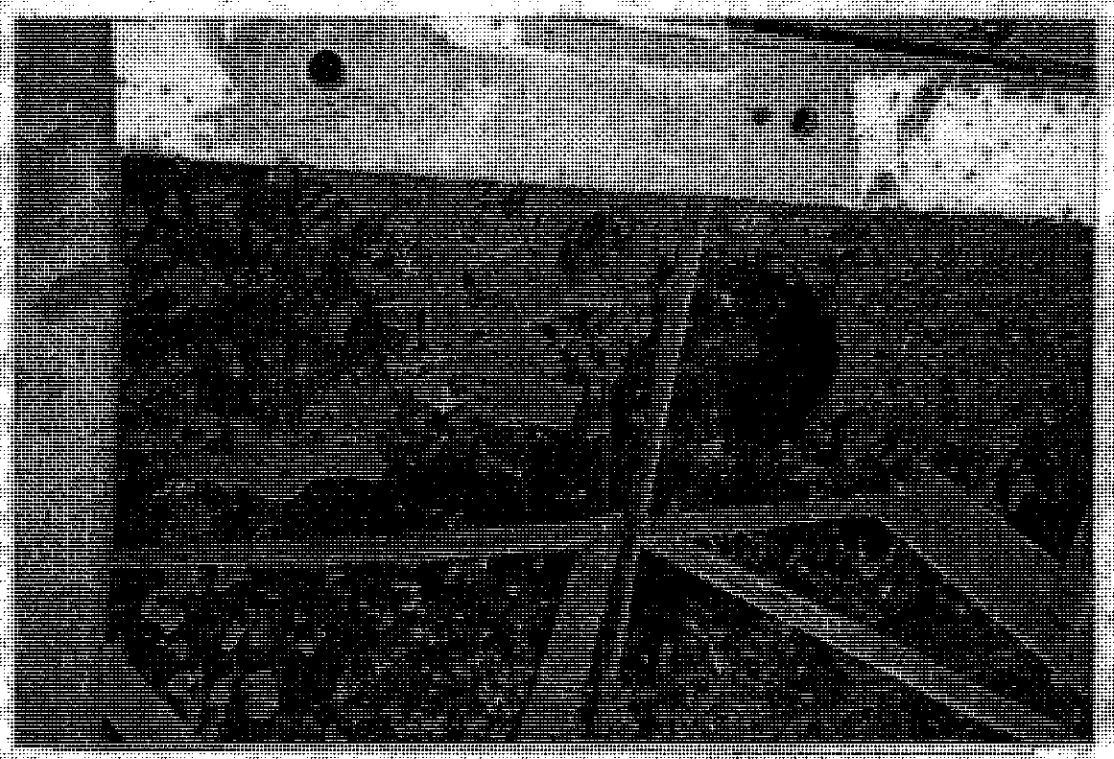
**Date** 5/20/97 **Time** 10:37 **Direction** North

**Description** The inside of the shop showing a draining table used to drain oil out of salvaged transformers.

**Project #**
06682403-77-13

Photo No. 6

Neg. No. 4



Site Name: Frank J. Doyle Transformer

Photographer/Witness: W. Byron K. Westberry

Location: 2026 E. Dallas/Wood Street, Lakeland, Texas

Date: 5/20/07 Time: 10:20 Direction: East

Description: The screen located inside the perimeter of the fence location.

Project #: 0010203-PT-10

Photo No. 7

Neg. No. 2

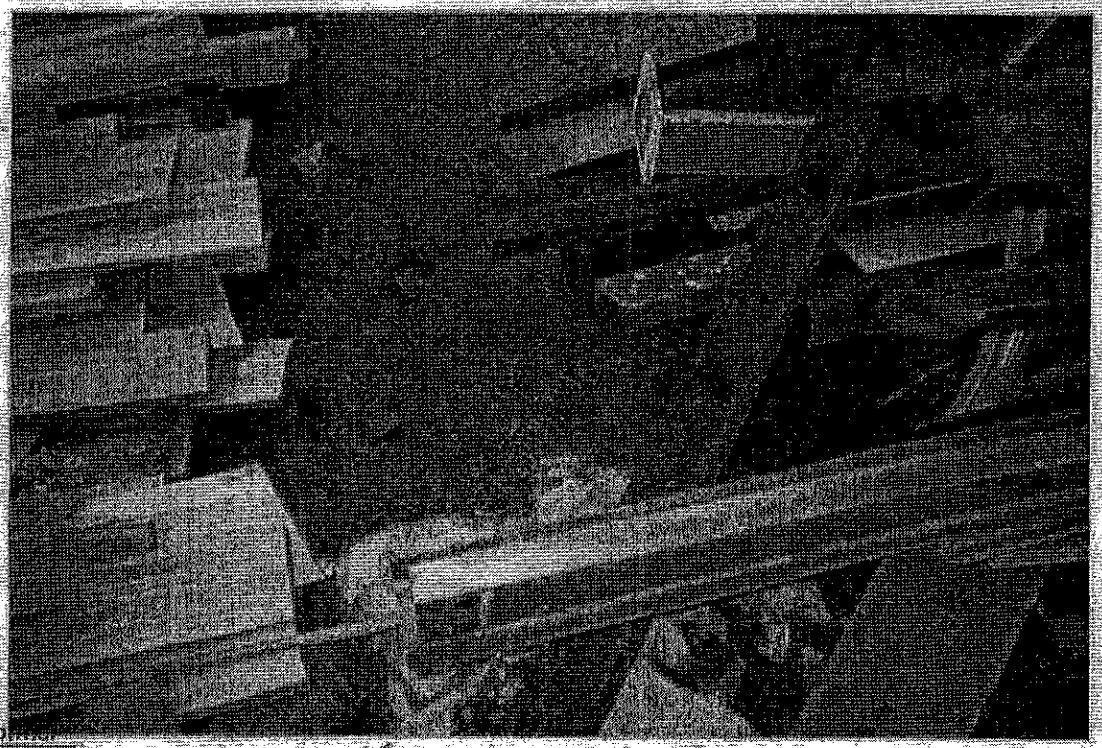
Photographer/Witness: W. Byron K. Westberry

Date: 5/20/07 Time: 10:20 Direction: East

Description: Oil stains located outside the shed. Notice the deterioration of the of the metal building.

Photo No. 8

Neg. No. 6



Site Name: Frank J. Doyle Transformer

Location: 305 E. Cottonwood Street Leonard, Texas

Project # 06682403-77-13

Photographer/Witness W. Bigley/ K. Westberry

Date 5/20/97 Time 10:30 Direction

Description Yellowish/green staining on the ground located outside the shop.

Photo No. 9

Neg. No. 7

Photographer/Witness W. Bigley/K. Westberry

Date 5/20/97 Time 10:30 Direction East

Description The south side of the shop. Soil staining was located near the debris pile.

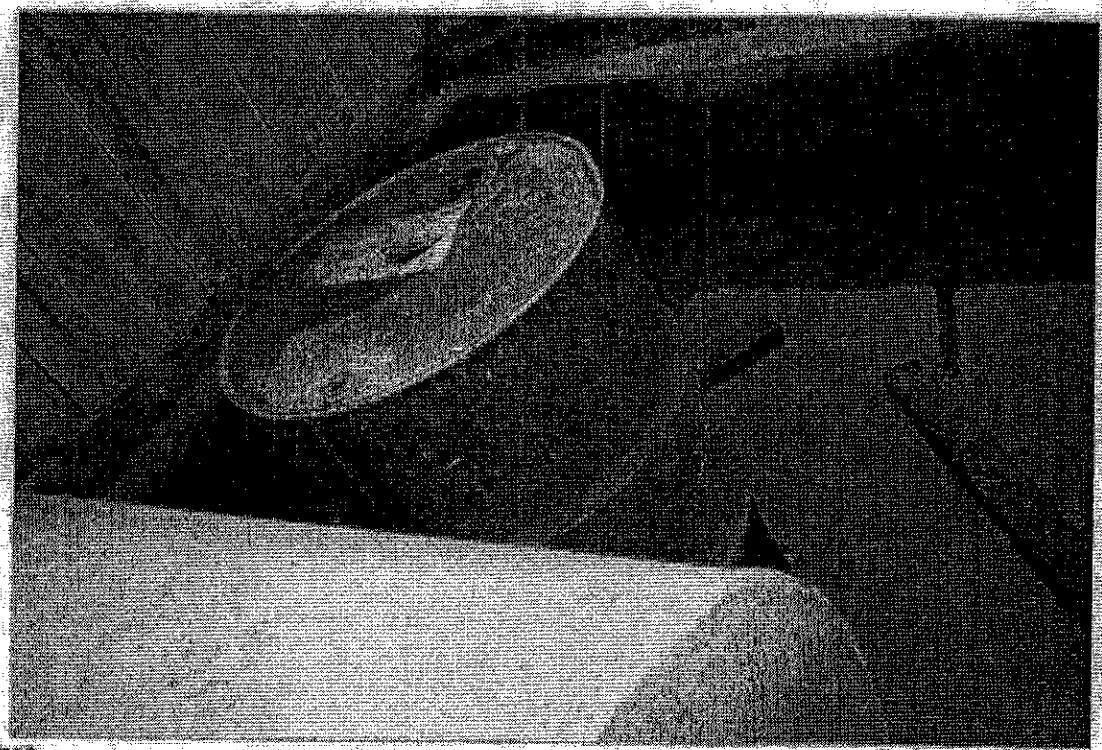


Photo No. 10

Neg. No. 8

**Site Name:** Frank J. Doyle Transformer

**Location:** 305 E. Cottonwood Street, Leonard, Texas

**Project #** 06682403-77-13

**Photographer/Witness** W. Bigley/ K. Westberry

**Date** 5/20/97 **Time** 10:27 **Direction** Northwest

**Description** View of the drum marked as corrosive inside the tank pit holding area.

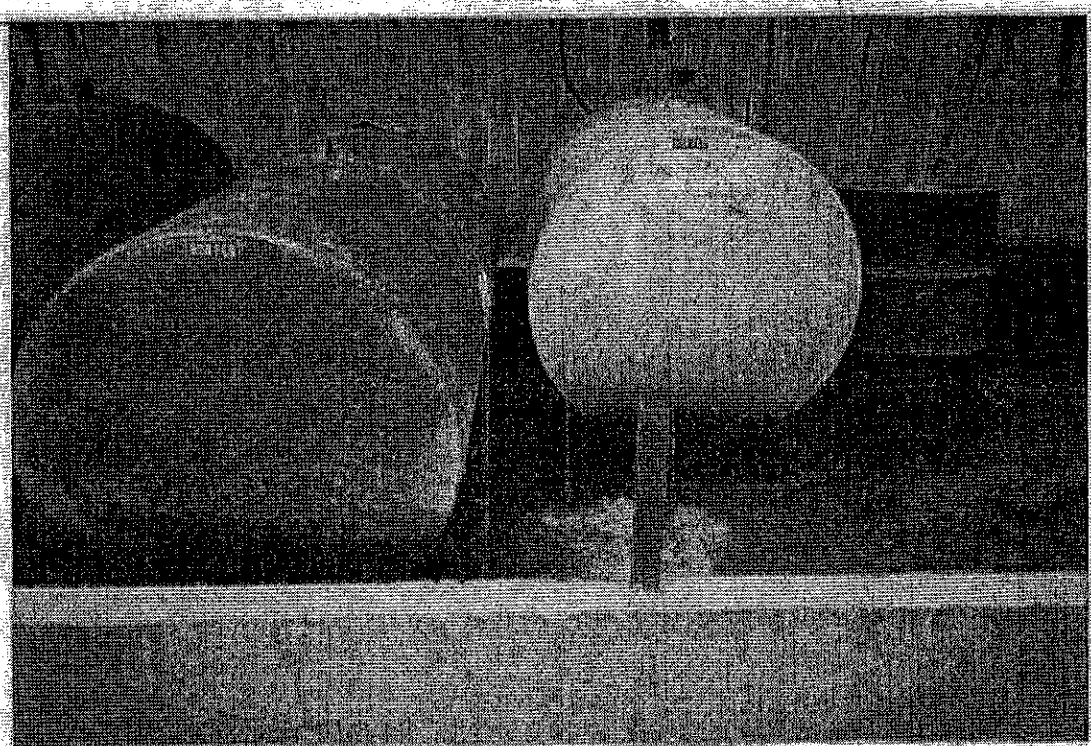


Photo No. 11

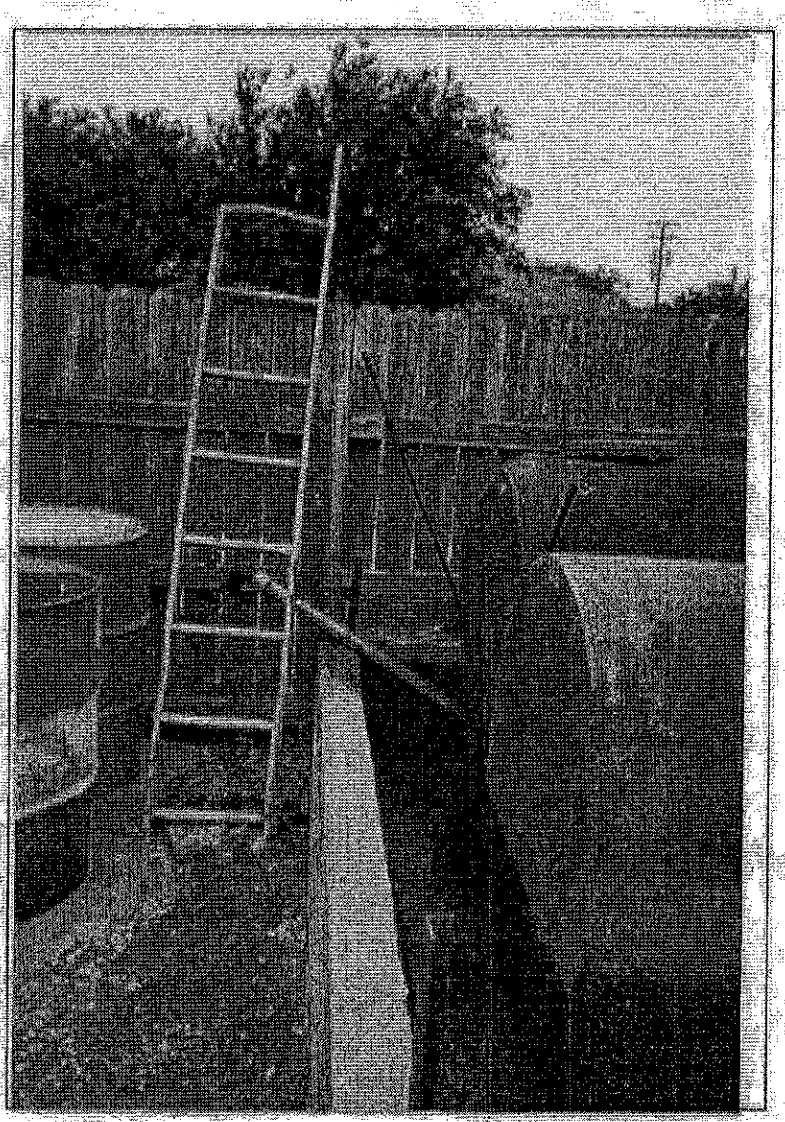
Neg. No. 9

**Photographer/Witness** W. Bigley/K. Westberry

**Date** 5/20/97 **Time** 10:26 **Direction** West

**Description** View of the tank hold area. Two 500 gallon and one 375 gallon storag tanks are inside a cement pit.

| Photo No. |
|---|
| 12 |
| Neg. No. |
| 10 |



**Site Name:** Frank J. Doyle Transformer
**Location:** 305 E. Cottonwood Street
**Project #:** 06682403-77-13

**Photographer/Witness** W. Bigley/ K. Westberry
**Date:** 05/20/97 **Time** 10:25 **Direction** North
**Description** Waste oil containment structure. Also shown is the location of waste collection for off-site disposal.

Photo No. 13

Neg. No. 11

**Site Name:** Frank J. Doyle Transformer

**Location:** 305 E. Cottonwood Street, Leonard, Texas

**Project #** 06682403-77-13

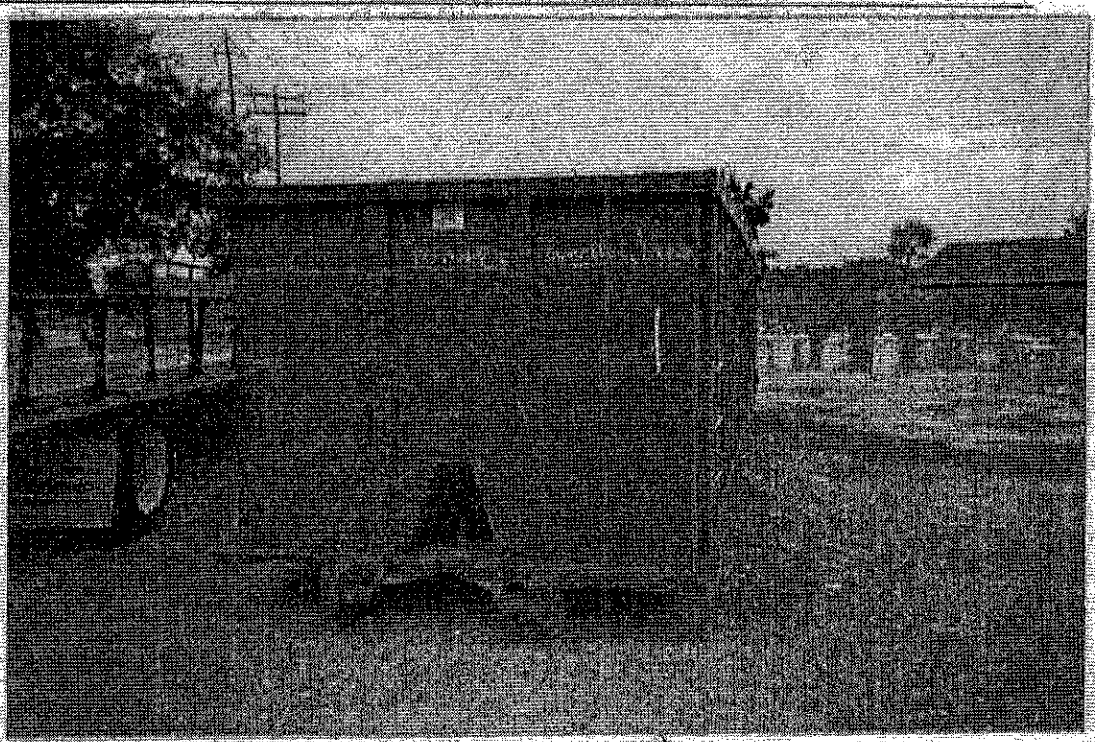
**Photographer/Witness** W. Bigley/ K. Westberry

**Date** 5/20/97 **Time** 10:25 **Direction** North

**Description** The southwest corner of the site. Location where sixteen 55 gallon drums are stored on a concrete pad.

Photo No. 15

Neg. No. 13



**Photographer/Witness** W. Bigley/K. Westberry

**Date** 5/20/97 **Time** 10:20 **Direction** South

**Description** A 20 yard dumpster used to store general refuse.

| Photo No. |
| --- |
| 16 |
| Neg. No. |
| 15 |

**Site Name:** Frank J. Doyle Transformer
**Location:** 305 E. Cottonwood Street
**Project #:** 06682403-77-13

**Photographer/Witness** W. Bigley/ K. Westberry

**Date:** 05/20/97 **Time** 10:30 **Direction** East

**Description** View along the north side of the shop. Note the staining and the condition of the transformers.

SWR 80951

partial of pdf in 80951 on d drive
"Pages from Screening Site Inspection Report smaller first half.pdf"
Ric Robertson 6/17/10
email

TNRCC

Protecting Texas by Reducing and Preventing Pollution

# Screening Site Inspection Report

for

## Doyle, Frank J. Transformer Site; aka: Frank J. Doyle Transformer
## TXD980865109
## Leonard, Fannin County, Texas

Prepared in cooperation with the
U.S. Environmental Protection Agency

August 1998

910274

SCREENING SITE INSPECTION REPORT

Doyle, Frank J. Transformer Site; aka:
Frank J. Doyle Transformer

Leonard, Texas

TXD980865109

SIGNATURE PAGE

James D. Thompson
Texas Natural Resource Conservation Commission
Site Investigation Manager

29 June 1998
Date

Stephanie Pogue
Texas Natural Resource Conservation Commission
PA/SI Program QA/QC Officer

9-10-98
Date

Allan M. Seils
Texas Natural Resource Conservation Commission
PA/SI Program Manager

9/11/98
Date

Wesley G. Newberry
Texas Natural Resource Conservation Commission
PA/SI Program Technical Director

9-14-98
Date

William Kirchner
U.S. Environmental Protection Agency

Date

# SSI Report

# Doyle, Frank J. Transformer Site; aka: Frank J. Doyle Transformer Leonard, Fannin County, Texas TXD980865109

Prepared in cooperation with the

**U.S. Environmental Protection Agency**

## Prepared by

**Texas Natural Resource Conservation Commission**
**Site Assessment Section**
**Site Discovery and Assessment Program Staff**
**Austin, Texas**

***September 1998***

The preparation of this report was financed through grants from the U.S. Environmental Protection Agency.

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NOTE

The State predecessor agencies: Texas Water Quality Board (TWQB), Texas Department of Water Resources (TDWR), Texas Water Commission (TWC), and Texas Air Control Board (TACB), referred to throughout this report are now known as the Texas Natural Resource Conservation Commission (TNRCC). The new agency, TNRCC, became effective September 1, 1993, as mandated under State Senate Bill 2 of the 73rd Regular Legislative Session.

## SECTION 1

## INTRODUCTION

The Texas Natural Resource Conservation Commission (TNRCC) has been requested by the U.S. Environmental Protection Agency (EPA) Region VI to conduct a Screening Site Inspection (SSI) at the Doyle, Frank J. Transformer Site; aka: Frank J. Doyle Transformer (EPA Identification number TXD980865109). The site is currently an active registered industrial solid waste generator and transporter facility (Solid Waste Registration No. 80952) that conducts salvage operations by stripping out-of-service power transmission transformers for recoverable metals. The facility has been owned and operated by Frank J. Doyle since 1974 until his retirement in January 1997 when operations transferred to his son, Gary Doyle. The owner lives adjacent to the site.

The site consists of approximately 0.6 acres located at 305 E. Cottonwood Street in northeast Leonard (pop. 1,744 - 1990 Census), Fannin County, Texas. The facility consists of a single office/shop with surrounding yard storage areas surrounded by a continuous wooden fence. The owner maintains a bermed concrete pad for 55-gallon drums and oil storage tanks (1-375-gal and 2-500-gal) for drained fluids. The facility uses a high-temperature oven to burn residual oils, paper and varnish from copper and aluminum transformer cores generating stack emissions and residual ash. The facility is a registered emission source and maintains an air operating permit under Texas Air Control Board (TACB) Air Operating Permit No. T-18612, with special provisions pertaining to maximum allowable polychlorinated biphenyls (PCBs), use of chlorine-containing wire insulation or building wire, no visible emissions and cleaning oven minimum/maximum operating temperatures with restricted fuel sources.

As a result of residential concerns, an EPA Technical Assistance Team (TAT) collected 94 soil samples at the facility from July 10-12, 1995, revealing elevated PCBs (Aroclor 1260) in soils ranging from 1.57 mg/kg to 2,730 mg/kg. The highest concentrations were detected adjacent to the south gate where large transformers are stored prior to salvaging operations. Other areas containing PCB contamination >50 mg/kg included the east side transformer storage area, the southwest tank storage area and areas along the south alleyway. Lower level PCBs were detected in the adjacent residential yard located 40' south of the site, the owner's yard and in an on-site transformer off-load area. During a May 20, 1997 EPA Preliminary Assessment (PA) site reconnaissance inspection, yellowish/green stains were noted in soils adjacent to the wooden fence line and the shop walls showed signs of metal sidewall deterioration. The full extent of PCB contamination in soils adjacent to the facility had not been established. Whether PCB contamination had entered a public supply drinking water well located 0.25 miles south of the site had not been determined.

## SITE OBJECTIVE WITH RESPECT TO THE PREREMEDIAL PROCESS

The preremedial stage of the Superfund process involves a PA and a site inspection (SI) stage consisting of an SSI and, if necessary, a Hazard Ranking System (HRS) Documentation Record. This SSI is being conducted to determine if the above-

referenced site is eligible for proposal to the National Priorities List (NPL) under the Federal Superfund Program. The SSI will focus on assessing the threats along the groundwater and soil exposure pathways within and adjacent to the site.

A PA has already been completed for the site. This SSI will build upon existing environmental data by obtaining additional background information relevant to the site through a file review and by collecting environmental samples to further characterize conditions at the site. Sampling conducted during the field work will attempt to document hazardous substance migration to and from the site from potential sources, and look for evidence of actual human and environmental exposure to contaminants. Results will be used to determine whether the site will move forward to a HRS Documentation Record or be designated as "no further remedial action planned."

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|---|---|
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| Texas Natural Resource Conservation Commission<br>Pollution Cleanup Division<br>Site Assessment Section<br>P.O. Box 13087, Capitol Station, Austin, Texas 78711-3087 | |
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| SITE CONTACTS | |
|---|---|
| Gary Doyle, Facility Manager<br>F. J. Doyle Salvage Transformers<br>305 E. Cottonwood Street, P.O. Box 312<br>Leonard, Texas 75452 | (903) 587-3342 |

## SECTION 2
## SITE BACKGROUND AND DESCRIPTION

### Site Information

The Doyle, Frank J. Transformer Site, aka Frank J. Doyle Transformer, is an active registered salvage yard that receives and processes out-of service power transmission transformers for recoverable metals. The site is located at 305 East Cottonwood Street in northeast Leonard (population 1,744, 1990 Census), Fannin County, Texas, as shown in Figure 1. The geographic coordinates of the site are Latitude 33° 23' 23" North, Longitude 96° 14' 34" West (ref 5, page 1). The site is bordered to the north by Cottonwood Street and a residential area, to the east by Poplar Street and the Leonard High School facility (225 students), to the south by an alleyway and two more residences, and along the western boundary by the owner's residence. Located less than 0.25 miles to the southwest are the Leonard Elementary School with 300 students and the Junior High School with 200 students (ref 5, pages 1 and 8). One of the facilities located southwest of the site is the school district day care center with play areas for small children and the nearest residence has a pony pen where small children frequently congregate (ref Appendix B, page 8).

The site consists of approximately 0.6 acres surrounded by a 6' wooden perimeter fence. The only structure is an office/shop where transformers are drained and stripped that contains a small oven used to bake removed transformer cores. Various yard storage areas surround the shop. There are three access gates located on the east (main entrance), south and west perimeter, which are normally locked after business hours. The facility is owned by Frank J. Doyle, who resides west of the facility, and the site is currently operated by his son, Gary Doyle. The shop yard is gravel-covered with a concrete driveway at the east entrance. A bermed concrete pad located in the southwest corners contains 55-gallon drums and oil storage tanks (1 x 375-gal and 2 x 500-gal) used to accumulate drained liquids (ref 5, page 1).

The facility receives used power transformers shipped from various companies located in Texas, Oklahoma, Louisiana and Arkansas that are off-loaded and stored on site. Residual oil is pumped from the transformer casings and placed in storage tanks located in the bermed concrete storage area. The transformer cores are then removed and placed on a draining table to allow any remaining oil to displace, which is placed in 55-gallon storage drums. The drained cores are then placed in an oven to bake off remaining oil, paper and varnish. The baked cores are removed, cooled and stripped for recoverable metals. Accumulated transformer oil is transferred from the storage tanks to trucks and shipped off-site to an authorized disposal/recycling facility by an authorized waste oil transporter (see site photographs #23 thru #31, Appendix A). According to the facility owner, Mr. Frank J. Doyle, the facility only accepted non-PCB filled transformers beginning in the late 1970's; however, prior to then transformer oil was not tested and some of the drained oil had been distributed to various individuals throughout Leonard for use as weed control (ref 5, page 2).

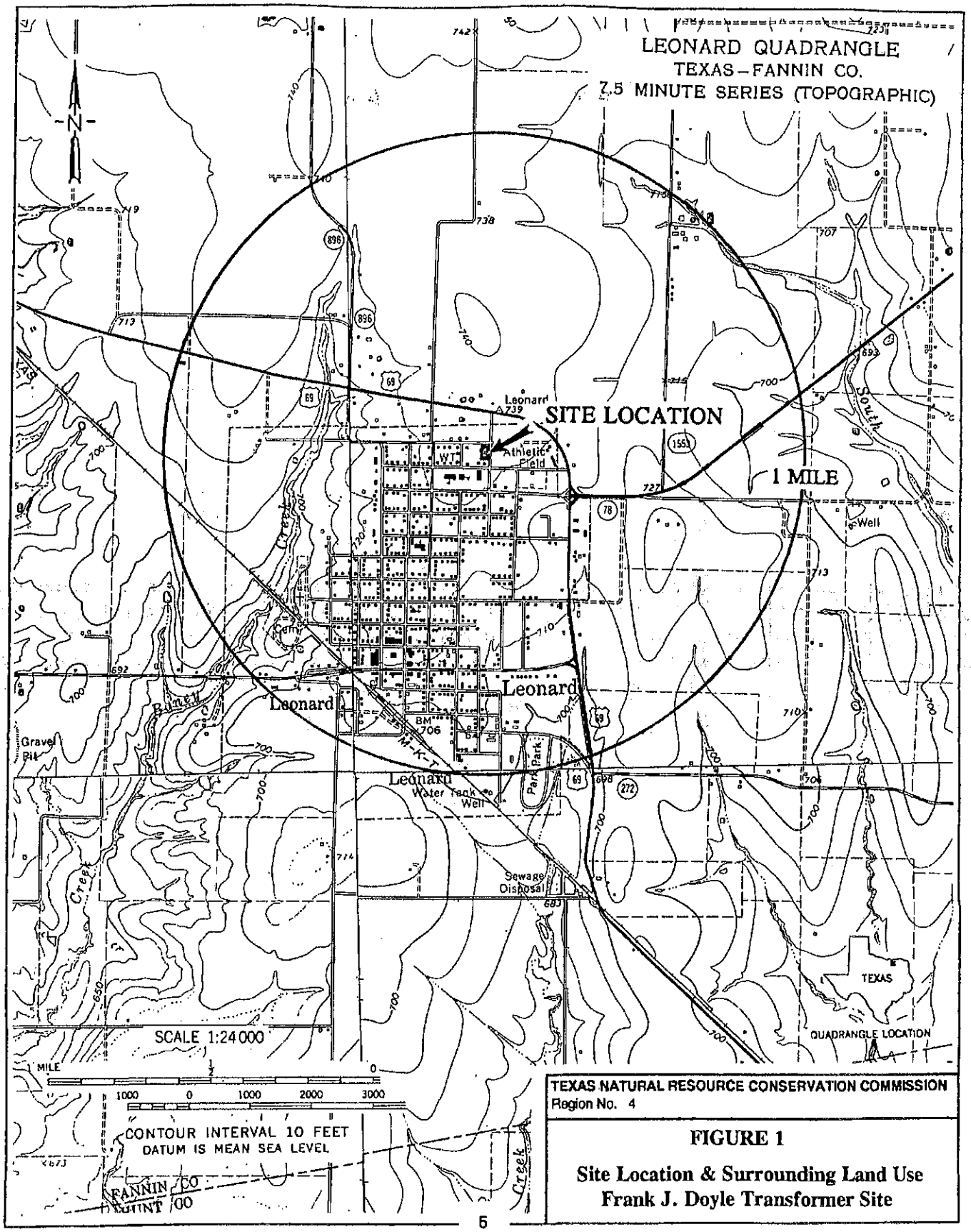


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**FIGURE 1**

**Site Location & Surrounding Land Use**
**Frank J. Doyle Transformer Site**

The facility submitted registration as a non-hazardous industrial solid waste generator/ transporter (Solid Waste Registration No. 80951) to the Texas Water Commission (TWC) on July 21, 1993, listing the following waste streams: (1) used oil from non-PCB transformers (Waste Code 12061), (2) ash residue from a furnace used to remove varnish from transformer cores (WC 23041), and (3) general plant trash (WC 39012). Listed waste management units included: (1) 1x375-gallon tank, 2x500-gallon tanks and various 55-gallon drum storage containers, (2) a high temperature oven, and (3) a 4-yd dumpster (ref 6, page 2).

On January 21, 1988, the facility applied for a special air operating permit (TACB Special Permit No. S-18612) for authorized operation of an 18,500 Btu/lb cart-loaded Model BB-26 Heat Cleaning Oven manufactured by BAYCO Industries, San Leandro, California to burn off residual oil, paper and varnish from transformer cores (ref 7, pages 1-3, atchs 1-5). After a lengthy public review period with 80 comment letters generated, a meeting was convened at the Leonard High School on March 22, 1988. Based on a comprehensive TACB review conducted on June 27, 1988 and issues discussed during the pre-hearing conference for Contested Case Hearing No. 245, the permit was approved based on Findings of Fact and Conclusions of Law outlined in a subsequent TACB-issued Order No. 88-07, dated July 15, 1988. The order was issued as requested by the facility owner so that opponents identified during hearings could not challenge the permit at a later date (ref 8, atch A, pages 1-10; ref 9, atch 2). On April 22, 1989, an air operating permit (TACB Permit No. T-18612) was applied for, approved and issued effective April 5, 1991, with special provisions as listed below for continued operations of the heating unit (ref 10, page 1 and atch 3):

(1) maximum allowable oven stack emission rates would be less than:

| | #/hr | TPY* |
|---|---|---|
| volatile organic compounds (VOC) | 0.004 | 0.002 |
| total nitrogen oxides (NOX) | 0.044 | 0.030 |
| sulphur dioxide (SO2) | 0.002 | 0.0012 |
| particulate matter (PM) | 0.030 | 0.018 |
| carbon monoxide (CO) | 0.021 | 0.013 |
| polychlorinated biphenyls (PCBs) | $6.75 \times 10^{-6}$ | $4.05 \times 10^{-6}$ |

*tons per year

(2) all combustible material would contain less than 50 ppm PCBs,

(3) each new source would be test certified to contain less than 50 parts per million (ppm) PCBs within 10 days of securing the new source,

(4) building wire containing chlorine insulation would not be combusted,

(5) the TACB and other authorized pollution control programs having jurisdiction could request sampling of any source material at any time,

(6) no visible emissions (opacity of 5% or less),

(7) oven operating instructions would be clearly posted,

(8) fuel sources would be restricted to natural gas, liquefied petroleum gas (LPG) or electrical power,

(9) combusted material would be less than 10% by weight of the total load,

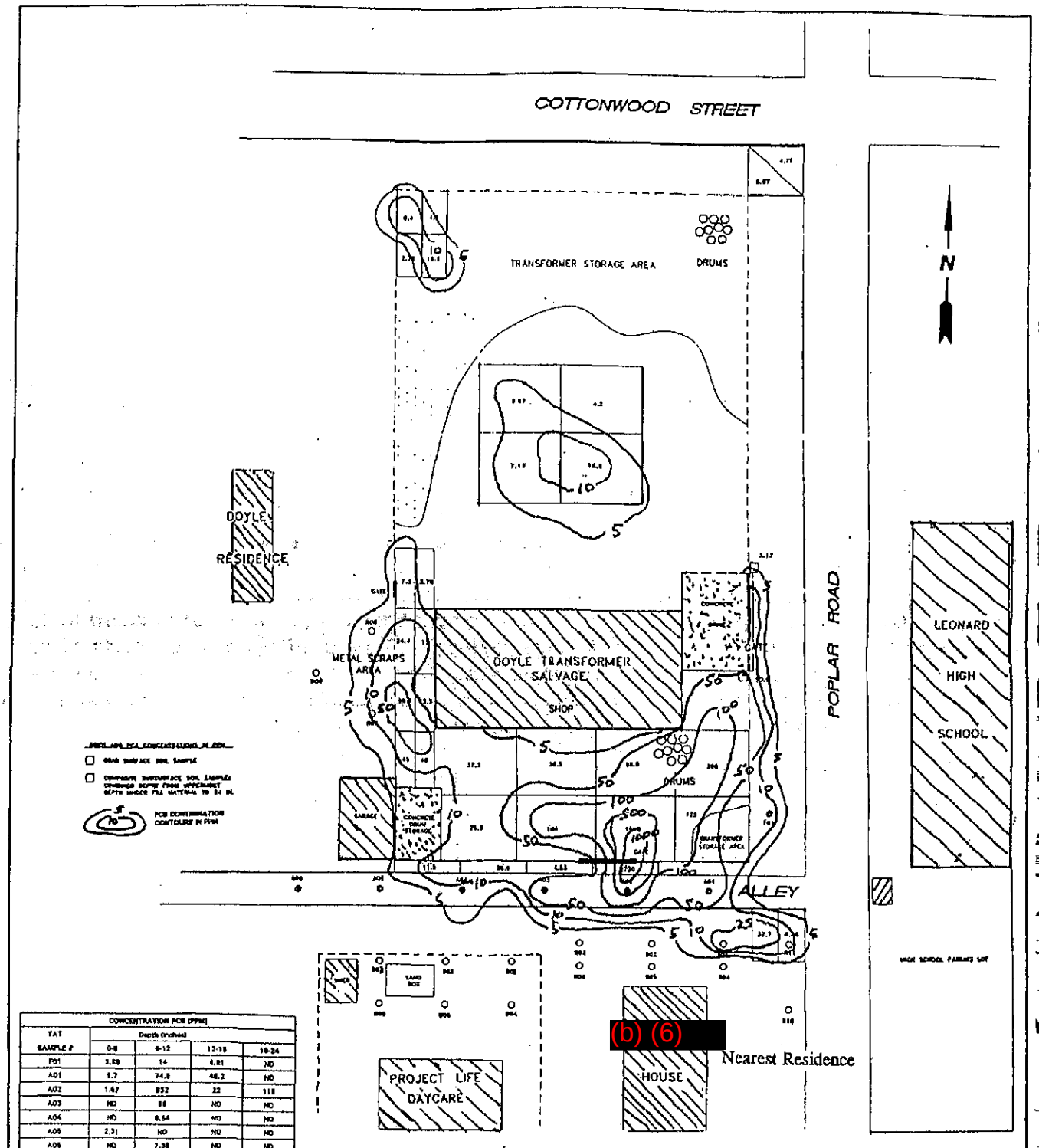
(10) ash would not become airborne, and

(11) the primary combustion chamber temperature would be maintained <800°F and the secondary combustion chamber would be >1400°F.

On July 10-12, 1995, an EPA Technical Assistance Team (TAT) conducted a site investigation for PCB-contaminated soils by collecting 94 surface and subsurface samples from visibly-stained areas on site and from locations outside the facility along the west, south and east perimeters. Adjacent residential yards, the alleyway, and bar ditches located along Poplar Street were sampled to determine the presence and/or extent of PCB contamination. On-site sample results revealed elevated PCBs (Aroclor 1260) ranging from 2.7 mg/kg to 1,590 mg/kg at depth 0"-24" within the gridded areas shown in Figure 2. The highest on-site levels were detected adjacent to the transformer storage area located at the south entrance gate. PCB values >50 mg/kg were detected near the tank storage area located in the southwest corner and near the transformer storage area at the east entrance (ref 5, pages 3-4).

Results from off-site samples indicated PCB-contaminated soils ranging from 1.57 mg/kg to 2,730 mg/kg at varying depths (0"-6", 6"-12", 12"-18" and 18"-24") located outside the perimeter fence, in the alleyway, and in two adjacent residential yards. The isopleths drawn in Figure 2 indicate the approximate extent and level of Aroclor 1260 PCB contamination. The table in Figure 2 indicates the depth interval. The highest off-site levels were detected just outside the perimeter fence adjacent to the transformer storage area located at the south entrance gate. The highest residential area level (37.7 mg/kg) was detected near the southeast corner of the site adjacent to the nearest residence's yard located 40' south of the facility at depth 0"-24". The highest public access area level (852 mg/kg) was detected in the alleyway south of the site (sample location A-02) at depth 6"-12", which is also adjacent to the south entrance gate transformer storage area. Both the sampled residential yard and alleyway are located downgradient from site sources (ref 5, pages 3-4).

Based on results of the July 10-12, 1995 soil investigation, a PA was authorized. An EPA TAT performed the PA on-site reconnaissance on May 20, 1997, collected additional site information and assessed potential threats to nearby residents and the environment. The PA identified two city-owned public drinking water wells, one located within 0.25 miles of the site and a third private-use well located within a




| TAT SAMPLE # | Depth (inches) 0-6 | 6-12 | 12-18 | 18-24 |
|---|---|---|---|---|
| P01 | 3.89 | 14 | 4.81 | ND |
| A01 | 5.7 | 74.8 | 48.2 | ND |
| A02 | 1.47 | 852 | 22 | 118 |
| A03 | ND | 88 | ND | ND |
| A04 | ND | 8.54 | ND | ND |
| A05 | 2.31 | ND | ND | ND |
| A06 | ND | 7.38 | ND | ND |
| R01 | 27.8 | ND | | |
| R02 | 3.76 | ND | | |
| R03 | 4.03 | ND | | |
| R04 | 3.62 | ND | | |
| R05 | ND | ND | | |
| R06 | ND | ND | | |
| R07 | 10.4 | 2.18 | | |
| R08 | 5.87 | ND | | |
| R09 | 2 | ND | | |
| R10 | ND | ND | | |
| R11 | 13.8 | ND | | |

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**FIGURE 2**

**Prior Sample Results Location Map**
**Frank J. Doyle Transformer**

1-mile radius of the site. Although the two city wells were noted developed in the deep Woobine aquifer at an average screened depth of 1,464', a file review revealed the wells had never been tested for PCBs (ref 5, pages 4-5).

Based on findings from the PA, an EPA SSI was approved on July 21, 1997 to collect additional site information and investigate other contaminants that may have migrated along the soil exposure pathway and possibly to the groundwater pathway. A review of current data to date indicated that the site would not likely meet minimum eligibility requirements as a federal National Priority List (NPL) site; however, information collected during the SSI would be evaluated prior to assigning the site for further action under State Authorities (ref 11, pages 1-2).

Therefore, the pathways of concern as described in the PA, dated May 20, 1997, are the groundwater and soil exposure pathways. The SSI will focus on establishing primary groundwater targets potentially exposed to source contaminants and/or any additional nearby residential targets that meet soil exposure target criteria. Since the PA identified no perennial streams or receptor bodies of water located within the two-mile target distance limit criteria, the surface water pathway will not be evaluated. In addition, since there is no evidence or analytical data to date indicating an air release from site sources, the air pathway will not be evaluated.

**Waste Containment/Hazardous Substance Identification**

The information used to identify the waste characteristics at the Frank J. Doyle Transformer Site was obtained from a review of both federal and state records. The site was identified to have several waste sources where hazardous substances may have been improperly disposed or spilled from careless handling during salvage operations. The specific areas of interest (as shown in Figure 5) include:

(1) a 50'x30' L-shaped **transformer storage area** located between the south and east entrance gates containing documented PCB-contaminated soils. The area is used for long-term storage of transformers received from suppliers,

(2) a 75'x30' L-shaped **container storage area** located in the southwest corner of the site containing documented PCB-contaminated soils. The area contains a bermed concrete pad and numerous tanks/drums used to store drained transformer oils prior to transfer and off-site disposal, and

(3) a 50'x50' **transformer off-load area** located in the north central portion of the site containing documented PCB-contaminated soils. The area is used to initially off-load out-of-service transformers received from suppliers and for short-term storage of the smaller transformers (ref 5, pages 2-4 and 7-8).

Transformer Storage Area - Initial EPA investigations of PCB contamination remaining in the southeast transformer storage area were conducted from July 20 to October 12, 1990. Subsequent EPA investigations were conducted on April 19, 1991 and again on September 7, 1994 (ref 5, pages 2-3). The owner also conducted separate soil investigations from May 23-24, 1995 using an environmental contractor (ref 5, page 3). Analytical results from the most recent EPA investigation conducted on July 10-12, 1995, documented elevated PCBs (Aroclor 1260) ranging from 135 mg/kg to 1,590 mg/kg at depth 0"-24" at various locations (shown in Figure 2) within the southeast transformer storage area (ref 5, page 3 and Figure 3). These values exceeded the listed TNRCC TAC 335.568 - Appendix II, Industrial Soil/Air and Ingestion (SAI-Ind) Risk Reduction Standard No. 2 medium specific concentration (MSC) level for PCBs at an industrial facility. The MSC level for PCBs at an industrial facility are less than 25.0 mg/kg by 5.4 to 63.6 times the maximum recommended value.

Container Storage Area - Visible evidence of contamination remaining in the container storage area was initially observed during the May 20, 1997 EPA PA on-site reconnaissance inspection when yellowish/green stains were noted in soils located along the fenceline adjacent to the container storage area where accumulated transformer oils were reportedly pumped to a tanker truck for off-site disposal. Further evidence of spilled/leaking waste oils was noted originating from cracks in several places along the edge of the deteriorating concrete berm with visible oil stains noted in the adjacent soils. Analytical results from the July 10-12, 1995 EPA PCB investigation revealed Aroclor 1260 ranging from 25.5 mg/kg to 48.0 mg/kg at depths 0"-24" in soils adjacent to the container storage area (ref 5, pages 3 and 7). These values exceeded the listed Appendix II, SAI-Ind MSC level by 1.92 times the maximum recommended value.

Transformer Off-Load Area - Analytical results from the July 10-12, 1995 EPA PCB investigation revealed Aroclor 1260 ranging from 4.2 mg/kg to 16.6 mg/kg at depths 0"-24" in the transformer off-load area (ref 5, pages 3-4). These levels were determined below the 25.5 mg/kg maximum recommended Appendix II, SAI-Ind MSC value listed for an industrial site.

Based on a file review of existing site characterization data, the primary contaminants of concern include PCB wastes that: (1) may have discharged to surface soils in the transformer storage area located in the southeast portion of the site, (2) that may have been spilled during transfer operations conducted in the container storage area located in the southwest portion of the site, and (3) that may have discharged to surface soils in the transformer off-load area located in the north central portion of the site. A summary of waste sources by identity, location, description, and estimated quantities are provided in Table 1.

## TABLE 1. SOURCE WASTE CHARACTERISTICS

| Source Identity | Source Location | Source Description | Estimated Quantity |
|---|---|---|---|
| Transformer Storage Area | Southeast portion of site | Transformer oils containing PCBs that may have spilled/ discharged to adjacent soils | Contaminated Soils<br>L-shaped area<br>20'x50' + 10'x20' = 1,200 ft² |
| Container Storage Area | Southwest portion of site | Transformer oils containing PCBs that may have spilled from transfer operations. | Contaminated Soils<br>L-shaped area<br>10'x75' + 20'x30' = 1,350 ft² |
| Transformer Off-Load Area | North central portion of site | Transformer oils containing PCBs that may have spilled during off-load operations. | Contaminated Soils<br>Box-shaped area<br>50'x50' = 2,500 ft² |

**Sources : Reference 5, pages 2-3 and 7; Appendix B, pages 12, 16.**

A total of three (3) source characterization soil samples (SO-17, SO-18 and SO-19) were collected during the SSI at depths 6"-12" just below a compacted gravel base from the three identified on-site waste management areas to: (1) substantiate prior sample results, (2) determine current levels of remaining source contamination, and (3) obtain Contract Laboratory Program (CLP) quality data. A summary of sample location/rationale is provided in Table 5 and approximate sample locations are shown in Figure 5. Sample location photographs include Photos #19 thru #22 (see Appendix A). Sample documentation was recorded in a field log book (see Appendix B).

All source characterization samples were analyzed for CLP metals, cyanide, polychlorinated biphenyls (PCBs), and CLP organics (volatiles, semivolatiles and pesticides). Inorganic analysis was performed by AATS, 1700 West Albany, Suite C, Broken Arrow, Oklahoma, and organic analysis performed by Clayton Environmental Consultants, 22345 Roethal Drive, Novi, Michigan. Summaries of chemical constituents detected 3X above highest background levels are shown below in Tables 2a and 2b. All additional analytical results are shown in Appendix C to include samples SO-17 thru SO-19, ER-01, ER-02, FB-01 and FB-02.

**TABLE 2A**
**Inorganics Detected in Source Samples and Highest Background**

| CLP Sample ID Number<br>Sample Description | SO-17<br>MFH-L99<br>Transformer Off-Load Area | SO-18<br>MFH-L94<br>Container Storage Area | SO-19<br>MFH-L95<br>Transformer Storage Area | SO-01<br>MFH-M13<br>Background Sample | SO-02<br>MFH-M14<br>Background Sample | SO-03<br>MFH-M09<br>Background Sample |
|---|---|---|---|---|---|---|
| Hazardous Substance | mg/Kg [SQL] | mg/Kg [SQL] | mg/Kg [SQL] | mg/Kg [SQL] | mg/Kg [SQL] | mg/Kg [SQL] |
| Copper | 279 [0.53] | 204 [0.53] | 30.9 [0.51] | 11.6 [0.55] | 20.6 [0.61] | 20.0 [0.60] |
| Reference | | | | | | |

CRDL = Contract Required Detection Limit. L = Reported concentration is between IDL and the CRDL.
[SQL] = Sample Quantitation Limit. ND = Undetected at the laboratory reported detection limit.
▒ = Greater than 3X the highest background value; or for a background sample, indicates the highest detected value. CLP = Contract Laboratory Program.
mg/Kg = milligrams per kilogram.
IDL = Instrument Detection Limit

**TABLE 2B**
**Organics Detected in Source Samples and Highest Background**

| CLP Sample ID Number / Sample Description | SO-17 FFR77 Transformer Off-Load Area | SO-18 FFR72 Container Storage Area | SO-18DL FFR72DL Dilution of SO-18 | SO-19 FFR73 Transformer Storage Area | SO-19DL FFR73DL Dilution of SO-19 | SO-01 FFR91 Bckgnd Sample | SO-02 FFR92 Bckgnd Sample | SO-03 FFR87 Bckgnd Sample |
|---|---|---|---|---|---|---|---|---|
| Hazardous Substance | ug/Kg [SQL] | ug/Kg [SQL] | ug/Kg [SQL] | ug/Kg [SQL] | ug/Kg [SQL] | ug/Kg [SQL] | ug/Kg [SQL] | ug/Kg [SQL] |
| Hexachloro benzene | ND [13,000] | 15,000 [14,000] | ** | ND [440] | ** | ND [460] | ND [500] | ND [500] |
| PCBs Aroclor-1260 | 160J [42] | 1,400,000* [44,000] | 2,300,000J [440,000] | 1,700* [44] | 3,100J [440] | ND [46] | 33J [50] | 340J [50] |
| Dilution Factor | 1 | 1,000 | 10,000 | 1 | 10 | 1 | 1 | 1 |
| Reference | | | | | | | | |

ND = Not detected at the reported quantitation limit. [SQL] = Sample Quantitation Limit.
* = Result not recommended for use because of associated QA/QC performance inferior to that from other analysis. CLP = Contract Laboratory Program.
** = Original sample was not diluted. ug/Kg = micrograms per kilogram.
PCBs = polychlorinated biphenyls.
▒ = Greater than 3X the highest background value; or for a background sample, indicates the highest detected value. J = Estimated value.

Table 2a reveals a single inorganic constituent **copper** detected in two of three source samples that was greater than three times (3x) the highest detected background level (3x20.6 mg/kg = 61.8 mg/kg) identified from soil sample SO-02. Soil sample SO-17 and SO-18 indicated moderate levels of copper at 279 mg/kg and 204 mg/kg.

Table 2b indicates a semi-volatile organic compound and a PCB that were detected greater than three times (3x) the highest background level or above a sample quantitation limit. Soil sample SO-18 indicated moderate levels of **hexachloro-benzene** at 15,000 ug/kg and soil samples SO-18 and SO-19 indicated qualified significantly elevated levels of **PCBs (Aroclor-1260)** at 2,300,000 ug/kg and 3,100 ug/kg respectively.

There were no volatiles, cyanide or pesticides in any of the source soil samples that were detected greater than 3X the highest background level.

## Groundwater Pathway

### Characteristics

General Regional Geology

The southern portion of Fannin County and the Frank J. Doyle Transformer Site are located in the northern fringe of a band of Texas Blackland Prairie. This physiographic province extends through North Central Texas and is characterized by broad flood plains with long parallel drainage-ways and shallow stream valleys with well-rounded drainage divides. Most of these shallow streams cease to flow during extremely dry periods, especially at the headwaters; therefore many rural areas depend on local groundwater for supplemental irrigation. Natural vegetation typically includes blue-stem, needle and buffalo grasses with isolated wooded areas along bottomlands (ref 12, Appendix G, pages G.1 and G.3; ref 13, page 2).

The stratigraphic units in Fannin County are from oldest to youngest, the Cretaceous age Trinity, Washita-Fredericksburg, Woodbine, Eagle Ford, Austin and Taylor Groups. The water-bearing units include the Woodbine Group and the deeper Paluxy and Twin Mountains Formations of the Trinity Group. Collectively, these units attain an average thickness of 3,400 ft and consist of interbedded limestone, marl, shale, fine sand, sandy shale, clay, chalk and mudstone with subordinate beds of fine-to-coarse sand, silt, gravel and some lignite (ref 14, pages 6, 7 and 10). The tightly-compacted clay, marl, limestone, chalk and shale layers of the Washita-Fredericksburg Group underlie the moderately productive Woodbine aquifer and act as an aquitard between the deeper and higher-yielding Paluxy and Twin Mountains Formations. As a result, there is no apparent inter-connection between the Woodbine and Paluxy/Twin Mountains aquifers (ref 15, page 5; ref 5, page 5).

Surface outcrops in Fannin County generally parallel the Talco Fault Zone, located less than 30 miles to the south in a north-south trending zone. The fault zone then trends eastward and parallels the Red River. The Cretaceous Age Austin Group is the major surface outcrop covering most of Fannin County, and consists primarily of chalk, limestone and marl interbedded with fine - medium grained fossilferous sands. Outcrops of the Eagle Ford Group are found north of the Austin Group outcrops along the Red River. Regionally, these stratigraphic units dip eastward beneath younger strata at typical rates of 40' per mile with a fairly constant thickness as depth increases. The Frank J. Doyle Transformer site is located on outcrops of the Austin Group (ref 14, pages 6-7; ref 15, pages 6-8 and 11).

Regional Hydrogeologic Setting

The primary water-supplying hydrologic unit in the vicinity of the site is the Woodbine aquifer, which is listed as a minor aquifer by the State of Texas (ref 16, Appendix G, page G.4). The underlying Trinity Aquifer is not used in the vicinity of the site. The

upper part of the Woodbine consists of crossbedded ferruginous sand, sandy clay and shale containing lignite and gypsum, making the water more highly mineralized. Thicker, lenticular shaped sands are primarily found in the lower part of the Woodbine aquifer. Clay content increases as the aquifer extends eastward and the Woobine ceases to be an aquifer in eastern Lamar and Red River Counties (ref 14, page 10).

The top of the Woodbine aquifer is approximately 1,500 ft deep ranging from 400 ft to 600 ft thick with an average thickness of 450 ft (ref 15, pages 8 and 11; ref 17, page 92). According to well logs for the two developed municipal wells located near the site, measured static water levels were 449 ft in 1960 and 536 ft in 1976 (ref 5, page 4; ref Appendix E, pages E-3 and E-9). Local groundwater use from the Woodbine includes supplementing agricultural irrigation, meeting livestock, industrial and food processing needs and use as a public drinking water supply source. Groundwater movement within the aquifer follows an east-southeast direction, which generally parallels the bed dip. The hydraulic gradient varies from over 37 feet per mile to less than 13 feet per mile (ref 15, page 19).

According to well log information, the average yield during development performance tests of the two city wells was 315 gallons per minute (gpm) with 74 foot drawdown (ref Appendix E, Well Log No. 18-39-701 and 18-39-702). The coefficient of permeability for the coarser sands found in the lower portion of the Woodbine is 44 gallons per day/ft$^2$. Transmissibility values range from 1,320 to 14,700 gallons per day/ft (gpdpf) with an average value of 4,700 gpdpf (ref 15, page 21).

Water quality is dependent on the mineral composition of the rocks through which it passes and generally groundwater becomes more mineralized at increased depth and temperature. Dissolved solids in the Woodbine aquifer generally exceed 1,000 milligrams per liter (ref 15, page 32; ref 17, page 92).

**Targets**

Based upon information contained in the State of Texas well logs, there are six (6) wells within a 1-mile radius of the site (see Figure 3). Two of the wells are former municipal wells (State Wells No. 18-47-101 and -102) and one is a test well (State Well No. 18-47-103) that were developed in the Woodbine aquifer. These wells were completed at depths ranging from 1,605 - 1,712 ft with screened intervals from 1,502 - 1,581 ft. These wells were plugged in 1975 and are no longer in use (ref Appendix E, pages 18-33).

According to the City Public Works Director, two wells (State Wells No. 18-39-701 and 702) are currently being used as the city's primary public drinking water source (ref Appendix B, page 1). The remaining well is a 48" diameter domestic well (State Well No. 18-39-9b) located 0.75 miles to the northwest developed in shallow perched groundwater at a depth of 50 ft. It has not been established whether this well is used as a drinking water source (ref 5, page 4).

There is no documentation indicating that drinking water wells in the vicinity of the site have been contaminated by hazardous substances from the site (ref 5, page 5). Results of two recent TNRCC Public Water Supply Regulatory Program water quality inspections conducted on October 26, 1994 and June 26, 1990, revealed no contaminants above Public Drinking Water Standards for the two municipal wells and from the nearby Arledge Ridge Water Supply Corporation well located 2 miles north of the site (ref 18, pages 1-4, atchs 1-3; ref 19, pages 1-3).

No wellhead protection areas exist within a 4-mile radius of the site (ref 20, Appendix G, page G.6).

The nearest potential groundwater target identified during the PA is the City of Leonard Pump Station No. 1 municipal well (State Well No. 18-39-701). This well is located at the intersection of (b) (9) [redacted] within a ¼ mile radius of the site as indicated in Figure 3 and illustrated in photo #1, Appendix A. According to the well log, the reported depth is 1,690 feet with a screened interval from 1,523 - 1,673 feet (ref 5, page 4; ref Appendix E, page 3).

Public, industrial, and domestic water wells have been identified within a 4-mile radius of the site using State of Texas water well logs and results of recent TNRCC Public Water Supply inspection reports (ref 18, pages 1-4; ref 19, encl 1). All well logs within the 1-mile radius and all public drinking water supply well logs within the 4-mile radius are included in Appendix E. Ground water target populations determined during the PA were calculated using an average of 2.48 persons per household for Fannin County and apportioned based on a combined well water distribution system serving 1,503 persons (1990 Census data) within a 1-mile radius (ref 5, page 5). Target population data for public supply Well No. 2 maintained by the privately-owned Arledge Ridge Water Supply Corporation was apportioned based on 185 connections and 2.48 persons per household within a 2-3 mile radius from the site (ref Appendix B, page 8; ref 19, page 1 and atch C).

Based on a review of TNRCC water well records, the following target populations were defined (ref 5, page 5; ref 19, page 1 and atch C; ref Appendix E, pages 1-46):

- Within 0 - 0.25 miles of the site, 1 public water supply well was identified. Drinking water from this well is apportioned to approximately 752 people.

- Between 0.25 - 0.50 miles of the site, there is 1 public water supply well. Drinking water from this well is apportioned to approximately 751 people.

- Between 0.50 - 1 mile of the site, there is 1 domestic well, 2 former public supply wells (closed) and a test well (closed). Drinking water from the domestic well is supplied to approximately 3 people.

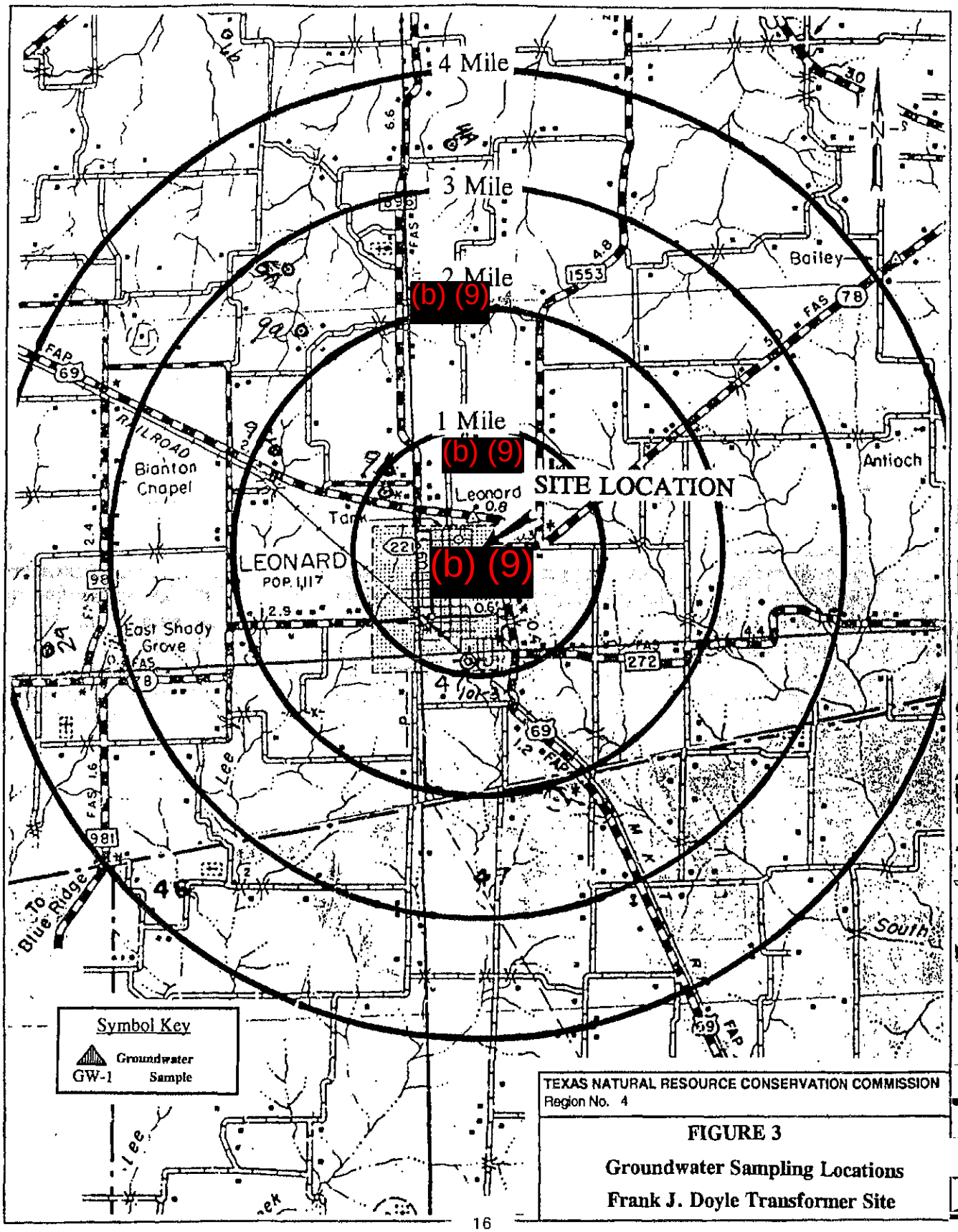


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**FIGURE 3**

**Groundwater Sampling Locations**

**Frank J. Doyle Transformer Site**

- There is 1 domestic well in the 1 - 2 mile radius from the site. Drinking water from this well is supplied to approximately 3 people.

- There is 1 domestic well, 1 public supply well and 1 well designated as other (stock well) in the 2 - 3 mile radius from the site. Drinking water from these wells is supplied to approximately 462 people.

- There are no wells within the 3 - 4 mile radius from the site.

A total of three public drinking water wells (groundwater samples GW-01 through GW-04 with one duplicate GW-02) were sampled during the SSI. The samples were analyzed for soluble and suspended contaminants to determine potential source migration to the Woodbine aquifer that may have originated from site sources. One of the wells located off-site and upgradient from identified site sources (GW-04) was designated as the background well for attribution of site contaminants.

Groundwater sample identification, description, location and rationale are provided in Table 3. Sample locations are illustrated in Figure 3. Sample location photographs include Photos #1 thru #4 (see Appendix A). Applicable sample documentation was recorded in a field log book (see Appendix B).

Analysis of groundwater samples was performed by the USEPA Houston Branch Laboratory, Houston, Texas for metals, cyanide, polychlorinated biphenyls (PCBs), and organics (volatile organic compounds, semivolatiles and pesticides). Summaries of chemical constituents detected are shown in Table 4. All groundwater analytical results are provided in Appendix C, samples GW-01 thru -04 and FB-03.

Based on a review of groundwater sample results, the only chemical constituent detected that qualified as a release (i.e., 3X the highest detected background level or above the sample quantitation limit) was low-level **bis2-ethylhexylphthalate** at 9.9 ug/L detected in groundwater sample GW-03.

There were no detected inorganics, volatiles, cyanide, pesticides or PCBs in any of the groundwater samples that qualified as a release.

## TABLE 3. GROUNDWATER SAMPLE LOCATIONS

| Sample Matrix | Sample ID # | Sample Location | Rationale |
|---|---|---|---|
| Groundwater Samples | GW-01 | City of Leonard Pump Station #1 (State Well No. 18-39-701) well located at the intersection of (b) (9) [redacted] | Assess potential groundwater contamination from a municipal well located nearest to the site. |
| | GW-02 | Duplicate groundwater sample from the same location as GW-01. | Quality Assurance/Quality Control (QA/QC). |
| | GW-03 | City of Leonard Pump Station #2 (State Well No. 18-39-702) well located (b) (9) [redacted] (b) (9) [redacted] | Determine the extent of groundwater contamination extending north of the site. |
| | GW-04 | Arledge Ridge Water Supply Corp. privately-owned drinking water well located (b) (9) [redacted] | Establish upgradient background values for attribution of contaminants to site sources. |

## TABLE 4 - INORGANIC AND ORGANIC GROUNDWATER SAMPLE RESULTS

| Inorganic Constituents µg/L | 8FAXDW02-01 GW-01 Pump Sta. No.1 | 8FAXDW02-02 GW-02 Duplicate GW01 | 8FAXDW02-03 GW-03 Pump Sta. No. 2. | 8FAXDW02-04 GW-04 Background | CRDL µg/L |
|---|---|---|---|---|---|
| Calcium | 856 | 981 | 987 | 947 | 150 |
| Iron | ND | 72 | 94 | 81 | 25 |
| Magnesium | 314 | 317 | 387 | 339 | 150 |
| Manganese | 5 | 5 | ND | ND | 5 |
| Sodium | 271,000 | 276,000 | 296,000 | 289,000 | 500 |
| **Organic Constituents ug/L** | **8FAXDW02-01 GW-01 Pump Sta. No.1** | **8FAXDW02-02 GW-02 Duplicate GW01** | **8FAXDW02-03 GW-03 Pump Sta. No. 2.** | **8FAXDW02-04 GW-04 Background** | **CRQL ug/L** |
| Bis2-ethylhexyl phthalate | ND | ND | 9.9 | ND | 4 |

CRDL = Contract Required Detection Limit.
ug/L = micrograms per liter.

CRQL = Contract Required Quantitation Limit.
ND = Analyte concentration undetected at the reported sample quantitation limit.

## Surface Water Pathway

### Characteristics

The Frank J. Doyle Transformer site is located within non-designated Segment No. 0306 at the western extreme of the Sulphur River Basin, which flows east joining the Middle and North Sulphur Rivers and converges with the Red River 308 miles downstream in Arkansas. The major tributaries of the Sulphur River are Days Creek and White Oak Bayou. The Sulphur River Basin drains an area of 3,558 square miles and includes 11 counties (ref 24, page 123). The drainage area upgradient of the site is estimated at 7 acres based on topographic map elevation contours (ref 21, page 1). During the SSI reconnaissance, it was noted that surface water at the site generally flows to the southeast along natural drainage areas collecting in the alleyway and bar ditch located east and adjacent to Poplar Street, thence flowing south to Hackberry Street where it pools at a culvert as shown in Figure 5. During periods of heavy runoff, the pooled water drains further south and east along roadside ditches seeking low areas (ref Appendix B, page 16). The city has few storm drains and the majority of the city's runoff is directed out of the city via drainage ditches (ref 5, page 6).

The site is not located within the 100-year flood boundary (ref 5, pages 6-7).

The 2-year 24-hour rainfall for the area of the site is approximately 4.0 inches (ref 25, page 95).

### Targets

According to the PA, there are no identified perennial streams or receptor bodies of water located within the required two-mile target distance limit criteria (ref 5, page 6). Figure 4 supports this finding revealing a radial pattern of surface water pathways originating near the City of Leonard that appear to drain outward from a broad elevated plateau. By inspection, all streams located within a 4-mile radius of the site are identified as intermittent (ref 22, page 2). In addition, the insert of the Sulphur River Basin shown in the upper left portion of Figure 4 indicates no perennial streams in the vicinity of the site and that the headwaters of the South Sulphur River (Segment 0306) appear to originate in southwest Fannin County near the City of Leonard flowing east (ref 24, page 125).

Since there are no identifiable perennial streams or receptor bodies of water within the required target distance criteria that may have received wastes originating from site sources, the surface water pathway will not be evaluated. Contaminants that may have migrated near the site along the limited overland flow segment of the surface water pathway will be evaluated under the soil exposure pathway.

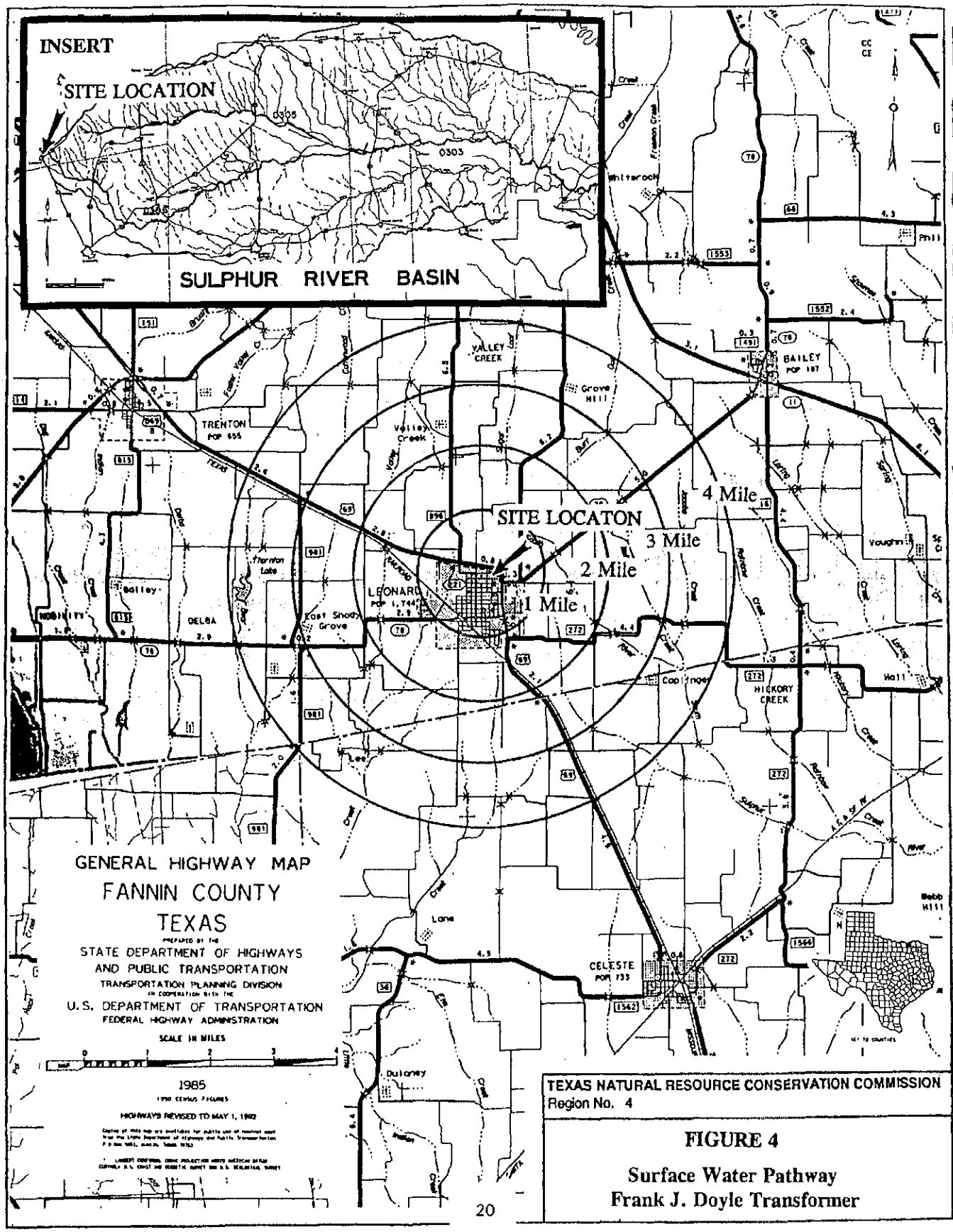


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**FIGURE 4**

**Surface Water Pathway**
**Frank J. Doyle Transformer**

## Soil Exposure Pathway

### Characteristics

According to the PA, public access to the site is restricted by means of a 6 foot-high wooden fence surrounding the site with three entrance gates located along the west, south, and eastern perimeter, which was confirmed during the SSI reconnaissance. According to the facility manager, the entrance gates are normally locked after business hours and during business hours, someone is normally at the site to preclude inadvertent entry. Vehicular access is thru the east and south gates with parking areas provided for visitors. The west gate is for pedestrians only and opens to the owner's residence (ref 5, page 7; ref Appendix B, page 2).

As shown in Figure 1 and photos #33 and #34, Appendix A, adjacent land use near the site is primarily residential since the site is located near the northeast city limits of Leonard, Texas (population 1,744 -1990 Census). There are several city parks, public schools, churches and local retail businesses located within a 1-mile radius of the site. State Highway (SH) 69 is a major public roadway located approximately 500' north and east of the site (ref 21, page 1; Appendix B, page 3 and 8). During the SSI off-site reconnaissance, it was observed that surface water originating from site sources generally flows to the southeast only for a limited distance. The runoff collects within nearby bar ditches and pools in low spots near adjacent residential yards as shown in Photos #8 - #11 and #33, Appendix A (ref Appendix B, page 16).

Potential off-site runoff sources applicable to the soil exposure pathway include the three previously identified on-site waste management areas (summarized in Table 1) where PCB-contaminated soils have been documented (ref 5, pages 2-3 and 7).

Since there is a likelihood of surface soil contamination remaining at or near the site, primary soil exposure pathway targets include resident population, resident workers, terrestrial sensitive environments and nearby population threats, which are discussed in more detail in the following sections.

### Targets

According to the PA, there were no on-site residences, day care centers or schools with occupants or persons in attendance who were within 200' of an identified area of observed contamination, which was substantiated during the SSI reconnaissance and interviews with knowledgable site personnel. In addition, there were no parks or other established recreational areas observed on-site and located within 200' of an area of observed contamination. The nearest occupied residence (as shown in Figure 2 and Photo #34, Appendix A) was noted located approximately 40 feet south of the site across an alleyway (ref 5, page 8; ref Appendix B, page 12).

The number of on-site workers, according to Mr. Frank Doyle, has been no more than three (3) personnel; however, there are numerous transporters and waste haulers who frequently visit the site conducting business. During the SSI reconnaissance, there were no observed adjacent business properties with work stations located within 200 feet of an area of observed contamination (ref 5, page 8; ref Appendix B, pages 2 and 8).

According to the PA, nearby population targets within 200 feet of a site source include the adjacent Leonard High School with 225 students, the Leonard Junior High School with 200 students and the Leonard Elementary School with 300 students. School locations and student population data were substantiated during the SSI off-site reconnaissance and during interviews with knowledgeable school personnel. In addition, a child care center, the Leonard Integrated School District (LISD) Child Care Center) facility, which has a children's playground located in the back adjacent to the alleyway, was noted located within 200 feet of a site source as illustrated in Photo #36, Appendix A. According to the child care center director, there are 6 adult staff and 14 pre-school aged children who attend from 7:30 am to 4:00 pm five days a week (ref 5, page 8; ref Appendix B, pages 7, 37 and 46).

Since the site is still active, there is frequent human activity at the site related to off-loading and handling of out-of-service transformers and conducting metal recovery salvage operations which could result in workers being inadvertently exposed to remaining site contaminants. In addition, both during the PA and SSI site reconnaissances, numerous students of all ages were noted walking to and from school along alleyways located south of the site as illustrated in Photo #9, Appendix A, where PCB-contaminated soils have been documented (ref 5, page 8; ref Appendix B, page 8).

Based on a review of Fish and Wildlife Service topographic wetland maps, there are approximately 1 acre of wetland within 0 to ¼ mile of the site, 3 acres within ¼ to ½ mile of the site and 5 acres within ½ to 1 mile of the site (ref 26, page 1). It had not been established whether these wetlands had been exposed to site wastes. However, based on the localized drainage patterns identified during the SSI off-site reconnaissance, it is not likely that these wetlands were exposed to site contaminants transported along the surface water pathway (ref Appendix B, page 10).

Nearby population threat values within a 1-mile radius of the site were estimated during the PA using the 1990 Census data for the City of Leonard and a house count within distance categories. There are an estimated 1,503 individuals living within 1 mile of the site (ref 5, page 5 and 8).

Applicable waste categories and potentially contaminated areas at the facility were previously identified in the PA dated May 1997 and during a review of State and Federal records, as previously noted. As a result, a total of sixteen (16) soil samples including two duplicates were collected during the SSI to substantiate releases of

remaining on-site contaminants to adjacent soils.

During the SSI, three (3) grab soil samples (SO-01, SO-02 and SO-03) were collected at depths 0"-6" from three unaffected upwind/upgradient locations ranging from 0.7 miles northwest to 2.2 miles north of the site to identify normal occurring background levels for contaminant attribution. The sample with the highest detected background level for the contaminant of concern was identified and used to determine if a release had occurred from the site. i.e., greater than 3X the highest background value.

Three (3) additional 5-part composite soil samples (SO-04, SO-05 and SO-06) were collected at depths 0"-6" from grassy areas located adjacent to the Leonard High School facility to assess contaminants that may have been transported along the surface water pathway or by air deposition from normal site activities.

A total of ten (10) other soil samples were collected from nearby off-site locations to assess contamination that may have been transported via surface water runoff or by air deposition. Four (4) grab soil samples (SO-07, SO-08, SO-09/10) were collected at depths 0"-6" from three low areas within drainage ditches located along Poplar and Hackberry Streets with SO-10 a duplicate of SO-09. One (1) grab soil sample (SO-11) was collected at depth 0"-6" from a low spot in the bar ditch located along the residential yard located south of the site and one (1) 5-part composite soil sample (SO-12) was collected at depths 0"-3" from the nearby day care center playground area. In addition, three (3) grab soil samples (SO-13 and SO-14/15) were collected at depths 6"-12" from two low areas along the south alleyway with SO-15 a duplicate of SO-14. Finally, one (1) grab soil sample (SO-16) was collected at depth 0"-6" along the fenceline of the adjacent residential yard located west of the site.

A summary of off-site soil sample location/rationale is provided in Table 5 and approximate sample locations are shown in Figure 5. Sample location photographs include Photos #5 thru #18 (see Appendix A). Applicable sample documentation was recorded in a field log book (see Appendix B).

All off-site soil samples were analyzed for CLP metals, cyanide, polychlorinated biphenyls (PCBs), and CLP organics (volatiles, semivolatiles and pesticides). Inorganic analysis was performed by AATS, 1700 West Albany, Suite C, Broken Arrow, Oklahoma, and organic analysis performed by Clayton Environmental Consultants, 22345 Roethal Drive, Novi, Michigan. Summaries of chemical constituents detected above release criteria are shown in Tables 6a and 6b. All additional analytical results not qualifying as release concentrations are shown in Appendix C, Samples SO-01 thru SO-16, ER-01, ER-02, FB-01 and FB-02.

## TABLE 5. SOIL SAMPLE LOCATIONS

| Sample Matrix | Sample ID # | Sample Location | Rationale |
|---|---|---|---|
| Soil Samples | SO-01 | Unaffected soil sample collected upgradient/upwind from site sources. | Obtain a background sample for attribution of site contaminants. |
| | SO-02 | Unaffected soil sample collected upgradient/upwind from site sources. | Obtain a background sample for attribution of site contaminants. |
| | SO-03 | Unaffected soil sample collected upgradient/upwind from site sources. | Obtain a background sample for attribution of site contaminants. |
| | SO-04 | 5-part composite 0"-6" deep from the grassy area north of the high school. | Assess contamination that may have migrated to the high school. |
| | SO-05 | 5-part composite 0"-6" deep from the grassy area west of the high school. | Assess contamination that may have migrated to the high school. |
| | SO-06 | 5-part composite 0"-6" deep from the grassy area south of the high school. | Assess contamination that may have migrated to the high school. |
| | SO-07 | Grab soil sample from the drainage ditch along Hackberry Street east of Poplar. | Assess contamination that may have migrated along the SW drainage pathway. |
| | SO-08 | Grab soil sample from the drainage ditch along Poplar Street south of Hackberry | Assess contamination that may have migrated along the SW drainage pathway |
| | SO-09 | Grab soil sample from the drainage ditch along Poplar Street north of Hackberry. | Assess contamination that may have migrated along SW drainage pathway. |
| | SO-10 | Duplicate soil sample of SO-09. | Quality Assurance/Quality Control (QA/QC). |
| | SO-11 | Grab soil sample from a low spot near residential yard located south of the site. | Assess contamination that may have migrated along the SW drainage pathway. |
| | SO-12 | 5-part composite 0"-3" deep from the backyard of a child day care center. | Assess contamination that may have migrated along the SW drainage pathway. |
| | SO-13 | Grab soil sample 6"-12" deep from the public alleyway located south of site. | Assess contamination that may have migrated from the container storage area. |
| | SO-14 | Grab soil sample 6"-12" deep from the public alleyway located south of site. | Assess contamination that may have migrated from the transformer storage area. |
| | SO-15 | Duplicate soil sample of SO-14. | Quality Assurance/Quality Control (QA/QC). |
| | SO-16 | Grab soil sample from a low spot in the residential yard located west of the site. | Assess contamination that may have migrated along the SW drainage pathway. |
| Source Samples | SO-17 | Grab soil sample 6"-12" deep from the transformer off-load area north of shop. | Assess source contaminants that may have originated from spilled transformer oils. |
| | SO-18 | Grab soil sample 6"-12" deep from a low area north of container storage area. | Assess source contaminants that may have originated from spilled transformer oils. |
| | SO-19 | Grab soil sample 6"-12" deep in an area west of the SE transformer storage area. | Assess source contaminants that may have originated from leaking transformers. |

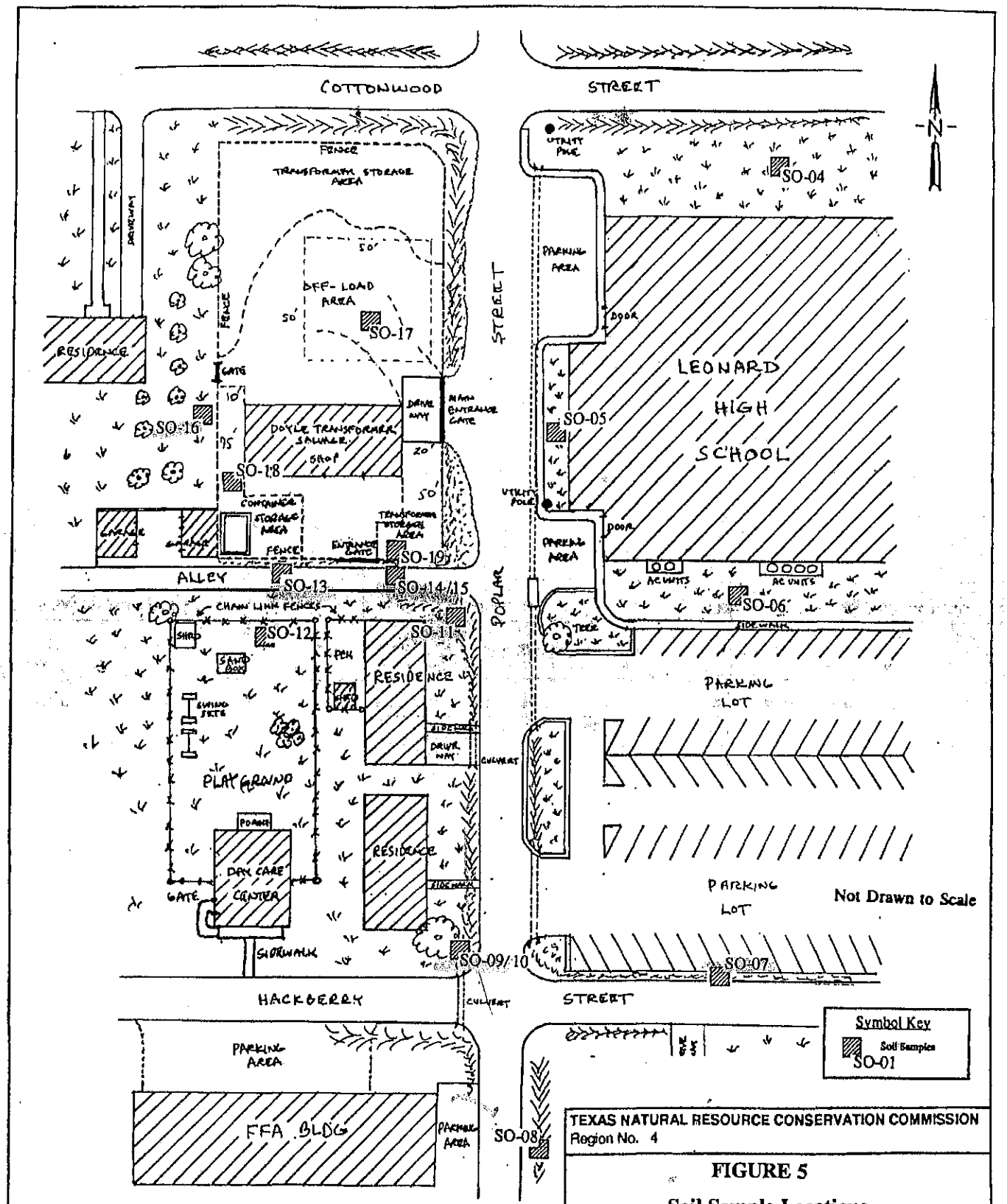


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**FIGURE 5**

**Soil Sample Locations**

**Frank J. Doyle Transformer Site**

Enclosure 4

CD providing PDF of correspondence provided in Enclosure 1, 2 and 3 of the November 3, 2016 IOM